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ORIGINAL LECTURES.

ONE YEAR'S WORK IN DISEASES OF THE RECTUM AT THE NEW YORK POST-GRADUATE MEDICAL SCHOOL AND HOSPITAL.

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GENTLEMEN: At the close of this, the first year of clinical instruction in diseases of the rectum, it is interesting to glance back over the case-book and see what has been accomplished. If the amount of material has not been as large as it doubtless will be in the future, it is because sufficient time has not yet elapsed to make this new departure in hospital work known to the sufferers who are benefited by it. And yet those of you who have been with me any length of time have had a chance to see almost all diseases of the rectum and the operations for their relief.

We have had 125 patients, showing 131 cases of disease of the rectum. These in the order of their frequency are as follows:

Hæmorrhoids	42	Deep pelvic abscess	3
Fistula	15	Congenital malformations	3
Fissure	10	Polypus	2
Benign stricture	9	Recto-vaginal fistula	2
Ulceration	6	Recto-vesical fistula	2
Pruritus	6	Paralysis of rectum from spinal disease	2
Superficial abscess	5	Urethral fistula and abscess	1
Cancer	5	Foreign body	1
Prolapse	4		
Papilloma	4		

For these various affections 67 operations have been done before the class, as follows:

Hæmorrhoids	17	Excision of rectum	3
Fistula	12	Polypus	2
Fissure	8	Plastic operation on anus	2
Colotomy	6	Recto-vaginal fistula	1
Abscess (superficial)	4	Deep pelvic abscess	1
Prolapse	3	Proctotomy	1
Ulcers	3	Foreign body	1
Papilloma	3		

You will observe at once that the number of severe and unusual cases (cancer, benign stricture, congenital malformations, etc.) is out of all proportion to the whole number of cases seen, probably because our medical friends are kindly sending us these cases, while the simpler ones take care of themselves. As a natural consequence our death-rate has been high—3 cases in 125—much higher than will be met in practice, as cases generally run. Without the least desire to explain away this rate of mortality or make it appear less than it is, it is instructive to call attention to it more fully. In one case we did an inguinal colotomy on a man at the point of death, regardless of statistics, but in the desperate hope of prolonging his life. You remember the case of the man whose stricture was divided by a deep posterior incision three months ago. Contrary to my usual practice, the incision was not continued outward through all the soft parts about the anus for drainage, but a drainage-tube was carried backward from the stricture through the skin at the tip of the coccyx. This procedure has served me well in other cases, and saves much time in the healing of the cut, but I advise you against it. The drainage is by no means as perfect as when the anus is divided, and a fistula may remain in the track of the tube. I do not know that the character of the drainage had any effect in this particular case, but on the third day an immense phlegmon appeared on the left side of the anus and in the perineum—a true septic periproctitis. Free incisions were at once made and constant antiseptic irrigation kept up, while for many days large sloughs of cellular tissue worked their way out through the cut. The patient went very near to death's door at that time, but rallied after a fortnight, and seemed on the point of recovering, when a diarrhœa began which never ceased. Six weeks before his death we tried to put the abscess in a condition to heal, and discovered, under ether, the frightful destruction it had caused. The superficial openings were turned into one, the cavity was cleared of its unhealthy granulations, but the finger passed into the ischio-rectal fossa and up into the pelvis parallel with the gut, and no limit to the suppurating cavity could be reached. There was a large opening between the rectum and the abscess just within the anus, and another higher than the finger could reach, which allowed all of the fæces to escape from the rectum into the abscess cavity. The attempt to excite reparative action failed, the abscess steadily extended into the pelvis, and as was shown by frequent hæmorrhages, vessels were opened up, and, finally, a few days before death, a communication was made with the bladder. At first the flow was entirely from the bladder into the abscess, but twenty-four hours before death signs of acute cystitis began to show themselves, and for this, as a last resort, colotomy was done. Those of you who saw the operation remember with what extreme rapidity it was performed (seven minutes from the first incision to the dressing), and how little shock attended it. The patient rallied well and seemed none the worse, but later on sank quietly and died the same evening. You can therefore judge as well as I of the influence of the incision upon the result.

In another of the fatal cases following colotomy the influence of the operation was, I think, absolutely *nil*. The woman had a cancerous stricture of the rectum, with secondary deposits throughout the abdomen in the mesentery and omentum. As it was impossible for her to relieve the bowels, the left inguinal operation was done, and we had great difficulty in finding any coil

of gut, small or large, sufficiently free from cancerous adhesions to permit its being drawn to the surface. The sigmoid flexure was, however, finally attached to the wound and the dressing applied without incising the gut. Forty-eight hours after the operation the patient suddenly developed all the signs of severe illness—chill, high temperature, and immediate collapse. Thinking that the acute obstruction at the site of the incision might be the explanation of the condition, I hastened to open the gut, but the intestine was not at all distended, and no gas escaped, as is usually the case. It being manifest that no obstruction existed at the point of operation, the case was supposed to be one of septic peritonitis, and the collapse and general cancerous infection decided us against further surgical interference. At the autopsy it was found that the patient died of acute intestinal obstruction, which was, however, entirely unconnected with the operation and in no way due to it. At the splenic flexure of the colon, many inches above the wound, the gut was tightly bound down and sharply flexed by a cancerous mass in the mesentery, and against this point a lump of solid fæcal matter had impinged and completely obstructed the lumen. In her feeble condition the fatal result followed in a few hours.

The third death was no less interesting and instructive. In this case we excised a cancerous rectum, the disease reaching high up, but not beyond the limit of digital examination. Excepting the presence of chronic intestinal obstruction the patient was in good condition and the case a favorable one for operation. After the disease had been removed a complication occurred which I was unable to explain at the time, but which became very evident at the autopsy on the following day in the dilated sigmoid flexure. A large mass of fæces, in fact an impaction as large as a child's head, was found, which I removed, piece by piece with the fingers before suturing the ends of the gut. No force was used, and yet before all had been removed there was free hæmorrhage, not from the wound, but from the inside of the upper end of the gut. After all of the collection had been scooped out the bleeding still continued, and after suturing the divided ends and putting in the drainage-tubes, it was necessary to apply a tampon of charpie within the bowel in order to check the flow of blood. As the ether passed off the patient began to complain of most violent abdominal pain, and after twelve hours, during which no relief could be given him, he died in collapse. At the autopsy a rent was found in the upper part of the rectum, but not connected with the wound, through which fæcal extravasation had taken place. The rent was in the middle of a part of the gut which had become as thin as blotting-paper from the ulceration, caused by the direct pressure of the fæcal mass.

Of the three deaths, then, it seems but fair to say that though they all followed within a few hours of capital operations, two were in no way due to the operation, and the third was not prevented by it.

In our other four colotomies we have had good results, both immediate and remote, as a result of this procedure. Two of the cases you have seen to-day, namely, the doctor with the non-malignant ulceration and stricture high in the bowel, which was incurable by any other method of treatment, and the little child of seven months born with an imperforate anus. This case I should not have been surprised to see die after the operation, so weak and marasmic was he, and so great was the distention of the abdomen. You remember how, when the incision was made, nearly the entire intestinal tube came out through the wound, the large gut distended to about the size of two thumbs and the small one shrivelled and contracted. The child was born with no anus at all, and at the time of birth a deep incision was made which reached the blind rectal pouch. As is always the case, the little patient had with difficulty been kept alive for seven months, suffering about equally from obstruction and the efforts made by bougies to overcome it. At the time of the colotomy it had gone several days without any passage, and then had unloaded the gut by five or six fluid stools, due to one of those violent intestinal convulsions by which nature so often overcomes for the time a chronic obstruction. These are not favorable conditions for the operation of colotomy, and yet the child has done well; nor, should it live, need it be so great an object of sympathy, for if adults in the higher walks of life are contented in this condition and grateful for the relief afforded, surely it may be borne by one who has never known a different condition.

We have been especially fortunate in the number of cases of this sort of congenital malformation brought to the clinic in the year. Many men in active practice have never seen a single case, and yet we have had three. Both of the others were simple fibrous partitions between the rectum and anus, which allowed the escape of a small amount of fæces, and might have been relieved, at least for a time, by division and subsequent dilatation, had the parents consented; but this case was of a more serious character, and left us no hope of prolonging life for any great length of time except by more radical measures.

I show you the case again to-day, one week after the operation, and the difference in the child's general appearance is very marked. You would hardly believe that it has reached the age of seven months, so small and marasmic is it; but the vomiting, restlessness, and fretful crying have ceased, and the little patient is dividing its time between eating and sleeping. I have been asked, rather sarcastically, whether it was not possible to relieve the obstruction in this case without cutting the baby open, and for answer I point to the child. One gentleman has introduced his finger into the cicatricial tissue which forms the anus, and at about an inch from the surface feels an obstruction which he rightly believes could be cut through. There is no doubt about this; but, after cutting, the stricture must be kept open by dilatation, and the results of seven months of this treatment are shown in the present condition of the baby. Does a few months more of the same treatment bid fair to restore the child to health? In this matter we have been guided not only by the manifest dying condition of the child, but by the recorded experience of such men as Brodie, Benjamin Bell, Velpeau, and Van Buren, each of whom has recorded his experience that the struggle is always a hopeless one, and after a few years ends fatally for the patient. Had I desired to give only temporary relief to the obstruction I should have cut and dilated the stricture; but wishing to see this child grow to adult age, I have made an entirely new outlet

for the fæces; and preferring to do this with the least possible shock and immediate risk, have made that outlet in the left inguinal region.

I want to call your attention to the differences in appearances between this anus and the one in the adult patient just seen. Here you see the wire suture which was passed through the abdominal wall and mesentery, and by which the gut was raised and held almost entirely outside of the abdominal cavity and bent on itself at an acute angle, still in position. We will remove it. You see also that the edges of the opening in the gut have been cut away so that you are looking directly into the interior of the gut. In the other case the gut was not drawn out of the abdomen to such an extent and none of its wall was sacrificed. This has been done with an object. The adult is suffering from benign stricture and ulceration at about five inches from the anus, which has rendered life miserable for nine years, and is incurable by any sort of local or general treatment save colotomy. But after this operation the ulceration is very likely to heal, and being a physician the patient may at first use bougies, either through the natural or artificial anus, and come back after a year or more to have the artificial opening closed. The opening has been made with the especial object of being able to close it in the future by a plastic operation, and without resection and suture.

In the baby there is no such hope, and the anus has been made so as completely to occlude the gut, leaving only a small opening into the distal portion to introduce the tip of a syringe for the purpose of washing out what fæcal matter may have been in the rectum at the time of operation.

Perhaps the most interesting, and certainly the rarest, case shown you was the girl of thirteen, with well-developed and advanced lupus of the ano-vulvar region and consequent stricture of the rectum, sent to us by Dr. Lee, of Newark. As far as I am acquainted with the scanty literature of this affection it is the only case on record in a child, and in this one it had existed since the age of seven years. Although the history is imperfect and the parents deny syphilis, it would seem that this case must have had a specific origin from the great improvement which has taken place after eight months' treatment by Dr. Lee with anti-syphilitic remedies. The child was shown again a few days ago and the ulceration had certainly been greatly diminished in extent, while the induration so strongly resembling elephantiasis which is characteristic of the disease had in great measure disappeared. The case when first seen seemed only suitable for colotomy, while now it appears in a fair way to recover.

Of benign strictures you have seen almost every variety, and likewise almost every mode of treatment. The congenital forms have been referred to. We have also had syphilitic stricture, stricture in a man associated with the practice of unnatural vice, that due to pressure of pelvic exudation in a woman, and that caused by simple ulceration neither lupoid, dysenteric, or tubercular—ulceration impossible to account for except by some such simple traumatism as may be caused by the lodgement of scybalous masses of fæces, or by childbirth. I have again and again called your attention to the small proportion of cases in which it was possible to discover any venereal origin of the disease, and have tried to impress upon you the danger of jumping to the conclusion that a stricture must of necessity be either cancerous or syphilitic.

In the way of treatment you have seen colotomy for the bad cases, excision where it was applicable, and simple proctotomy. What you have not seen are the results which may follow this last measure, when patiently and intelligently carried out, and supplemented by systematic dilatation in a better class of cases than are seen here. This is the one method which should be relied upon in a large number of cases, and by it many patients may be made comfortable for life; but, unfortunately, it is seldom applicable to the poor in hospital practice. It is a method for the rich, and one covering years of patient work; but by it I have seen the nearest approach to a cure of the disease. Proctotomy is only the beginning of the treatment, and you have seen that done here. But the patient has not returned to us, and we know that by this time she is preparing to go to some other hospital for something else.

In the treatment of hæmorrhoids the clamp and cautery operation has been used in all cases except one, and the question of its advantages has been left entirely to the decision of the class. You know what is claimed for it here—quicker recovery and less pain than by any other method of cure. You have seen the patients again and again able to come down stairs to the out-patient room forty-eight hours after the operation, and heard them say that after the first few hours there was only a sense of soreness and some pain on defæcation. You have seen physicians leave the hospital and start in comfort on long journeys on the fourth day, though you have never heard me advise such a procedure. Usually the patients stay in the house for one week; seldom do they wish to stay longer. Almost invariably they are able to urinate without the use of the catheter. Accidents have not occurred, and it has been impressed upon you that the surest way to avoid them is to cauterize thoroughly the stump held in the clamp after cutting off the body of the hæmorrhoid with the scissors; and to see that there is no bleeding from the cauterized surface. After the operation is finished, a large speculum is introduced, and the rectum well irrigated with bichloride solution. If there is no bleeding then, there is no more likelihood of secondary hæmorrhage than there is after the ligature; and if there is bleeding (not from the cutaneous cuts with the scissors, but from the cavity of the gut), the operation is simply not finished, and the bleeding point must be secured. The cutaneous bleeding is controlled by direct pressure with pad and bandage, as in the ligature operation.

Carbolic acid injections have been used in one case where this method seemed specially indicated. The woman was at the end of the third month of pregnancy and was covered with a syphilitic eruption, and operation was therefore out of the question; but she was suffering greatly and bleeding profusely with each act of defæcation. A few drops of a ten-per-cent. solution of carbolic acid were injected into two of the hæmorrhoids, and a third one, with an eroded strawberry-like surface, was painted with nitric acid, and all of the bad symptoms ceased. But I explained to you that the woman was certainly not cured, as she supposed herself, and that what was done was not free from serious risks of

sloughing and abscess, though less likely than a radical operation to produce a miscarriage.

The same thing may be done in many cases with the same happy results. It is a fascinating procedure to both patient and surgeon till the bad case comes along; but after causing one severe phlegmonous inflammation of the peri-rectal cellular tissue the *surgeon* generally abandons it for methods attended by less risk and by permanent results.

Of fistulæ we have had all varieties from the simpler ones which were cut in the out-patient room without ether, to those extending deep into the pelvis, and the case of combined recto-vaginal and vesico-vaginal openings, due probably to chancroidal ulceration. In the one case of large recto-vaginal fistula associated with an abscess behind the uterus, in which the attempt was made to reach and suture the opening by a Kraske's incision, the operation was a failure, due, perhaps, to the difficulty in getting at an opening so near the body of the uterus, or perhaps to the presence of the abscess discharging into the vagina at the site of the fistula.

Another bad case of fistula-in-ano, extending deep into the pelvis, was the one due to carious bone on the anterior and lateral surfaces of the sacrum. The first operation here also was a failure, because the incisions, though deep, were not deep enough. At the second trial the coccyx and lower sacral vertebræ were removed, the incision was carried along the side of the sacrum to about its middle, and the diseased bone scraped away. Tracks were then found running around the deep urethra on both sides behind the triangular ligament, which were also scraped out with the finger. The patient still reports to us occasionally with the wound entirely healed except a small sinus just admitting a probe, which leads to the stump of the sacrum.

ORIGINAL ARTICLES.

THE TREATMENT OF ENTERIC FEVER, WITH SPECIAL REFERENCE TO THE METHOD OF BRAND.[1]

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A FRENCH medical writer has said, "When I see a young man die from typhoid fever, I experience the sensation of having witnessed a homicide." Here, as always, something of the truth is sacrificed to the desire to be epigrammatic, but no one who has carefully studied the subject, can fail to enter into the spirit which suggested this forcible statement.

In the first place, enteric fever, in theory at least, is a preventable disease. Our knowledge of its causation is to-day sufficiently extended and accurate to make it a preventable disease in practice. That it is not prevented in communities where it is endemic is largely due to the absence of positive convictions as to the material nature of the infecting principle and the possibility of destroying it or preventing its spread. It is the highest duty of the doctor to see to it that no new cases of infectious disease arise, by direct or indirect contagion, from any patient under his care. In enteric fever we have to do with a disease in which this is wholly practicable. Not only may the spread of the contagium be prevented, but the infecting principle can be wholly and absolutely destroyed. It is not too much to say that this disease, the great fever of the present historical epoch, is among the scourges of mankind which can, by organized effort, be stamped out; not in the wide sense that in the history of the past two centuries the plague was driven from Western Europe, that typhus disappeared from ships, jails, and armies, and that leprosy died out in Great Britain, but in a much more narrow and literal sense. There is abundant evidence in medical literature to show that organized prophylaxis, dealing with the water-supply, the milk, the drainage, and the excreta of individual cases, is capable of eradicating enteric fever from restricted localities.

In the second place, enteric fever is a curable disease. I use the word curable in an equally literal and narrow sense. It is my purpose here, having some slight personal knowledge of the matter, to endeavor to demonstrate that this proposition is true. I am not sure that I shall succeed. It is no easy thing to unsettle established convictions and to gainsay the conclusions of experience which seems to be based upon the daily observation of facts. Nor, indeed, have I the warrant of a sufficiently extended personal observation to do so.

Certain recent experiences in this disease have, however, greatly modified my views as to the part played by treatment, and it is because the treatment of which I am about to speak is, as a plan, so different from that generally employed, and because the results, as shown both by the course of the disease in individual cases and by the diminution of the death-rate, are so striking, that I feel impelled to urge this plan upon the attention of my professional associates who have not yet had an opportunity to try it. I know that enteric fever destroys, in the aggregate, more lives that could be saved than does any other acute infectious disease. I believe that, in the words of Baruch,[1] "We are standing to-day on the threshold of a great epoch in the treatment of this disease."

What has been the treatment up to the present time? Among innumerable plans, a host of drugs, and countless modifications of the methods of administering them, we may distinguish four general methods of treatment.

[1] Read before the Lycoming County Medical Society, at Williamsport, Pennsylvania, November 4, 1890.

[1] Reprint from the Transactions of the New York State Medical Society, February, 1889.

First, *the expectant plan*. Under this head must be included pure expectancy and those methods in which measures or medicaments are employed which are incapable, either by reason of want of force or by minimum dosage, of producing any physiological or therapeutic effect whatever. The disease is practically left to run its course, the duty of the physician being confined chiefly to regulating the hygiene and the diet.

Second, *the expectant-symptomatic*, or so-called *rational plan*, which is an extension of the expectant plan in that symptoms, as they arise, are treated by measures of more or less energy especially directed against them. Under this plan the physician's duties are manifold and perplexing, and the therapeutic measures, instituted in response to various indications, are complex, difficult, and often at variance among themselves.

Third, *the antiseptic plan*. This method has its origin in the fact that the evolution of the disease is due to the development within the organism of pathogenic germs, a process which continues until the soil is practically exhausted and the germs cease to grow. It recognizes the splitting up of complex chemical compounds entering into the formation of the fluids of the body, with the result of the production, on the one hand, of the pabulum necessary to germ-growth, and, on the other hand, of toxic substances foreign to the organism, to which the fever and the other symptoms are chiefly due. This plan of treatment claims to do all that the expectant and the expectant-symptomatic plans do, and undertakes to anticipate the development of unfavorable symptoms, by at least holding in check the cause of those symptoms. It embraces, first, intestinal antisepsis, and second, in theory, at least, constitutional antisepsis, and under certain forms has appeared to exercise a favorable influence upon the course and mortality of the disease.

Fourth, *the antipyretic plan*. This plan is based upon the theory, long since formulated by Griesinger, that the fever in great part controls the situation. It demands as an essential of treatment the restriction of the temperature-rise within limits, and insists upon the use of therapeutic measures to reduce the temperature whenever it attains a certain degree of elevation varying according to the views of different practitioners. These measures are, first, antipyretic drugs, and second, the external application of cold water. Under this plan the attention of the physician is directed to high temperature as at once the most serious symptom and the chief indication for treatment.

While these plans are in the main essentially different, it cannot be said that the boundary-line between them is absolutely fixed. Thus as intestinal antisepsis unquestionably exerts a favorable influence upon the intestinal symptoms, it constitutes to a certain extent a symptomatic treatment. And in the same way the symptomatic and antipyretic methods overlap.

Under one or the other of these four plans, or under some combination of them, enteric-fever cases are treated.

There are two tests of the efficiency of treatment in serious acute diseases; first, the effect upon individual symptoms and upon the clinical course of cases taken together in series; and second, the influence upon the death-rate. Submitted to these tests, none of the four general plans can be said to yield satisfactory results. Making due allowance for the fact that the enteric fever of childhood, from the second until the twelfth year, is a mild disease, with an extremely low mortality, and making further allowance for the large number of mild cases among adults which tend to recover without treatment, we all regard the disease under consideration as a serious one, often protracted, grave in itself, liable to dangerous complications, frequently followed by serious sequelæ, and terminating in a protracted convalescence. Many practitioners, having decided upon some one of the above plans of routine treatment, of which the details are modified to suit individual cases, come to regard it as the proper plan and to consider the results as on the whole satisfactory. Such confidence is occasionally seriously shaken. But the force of habit, the lack of a better method, and of the criteria by which to judge any plan, forces a return to the old method. Indeed, in testing the influences of therapeutics in the acute infectious diseases a wide experience and a critical scientific spirit are essential. If here and there a practitioner of large experience is satisfied with his results in the management of this disease, the same cannot be said of the profession as a whole. The very multitude of plans and remedies which overcrowd the journals shows a continued unrest and dissatisfaction with existing methods of treatment.

When we come to apply the second test, namely, the influence upon the death-rate, dissatisfaction with existing methods finds ample warrant. The rate of mortality in private practice is unquestionably lower than that among persons treated in hospitals. This is chiefly due to the previously better condition of private patients, and to the fact that they come earlier under treatment than do hospital patients, it being a matter of common observation that the mortality of cases neglected in the beginning of the disease is very much higher than that of those who early come under treatment. The statistics of private practice, however, are limited and difficult of access and are commonly based upon an insufficient collection of facts. Hospital statistics are more trust-

worthy; they are derived from facts observed by many different physicians, and in sufficiently large collections. They are, however, open to the objection that they probably indicate a death-rate somewhat too high.

The following reliable statistics collected from the great mass which is available indicate the hospital death-rate:

	Cases.	Deaths.	Mortality.
London Fever Hospital (21 years) .	8000	1519	18.9
" " " (9 years) .	500	80	15.9
Pauper Hospital at Homerton . .	1509	255	16.8
Stockwell Pauper Hospital . .	1223	301	22.6
St. George's " . .	387	76	19.6
Guy's " . .	295	57	19.3
University College " . .	163	29	17.7
St. Bartholomew " . .	635	104	16.3
St. Thomas " . .	445	70	15.7
Middlesex " . .	461	72	15.6
King's College " . .	318	39	12.2
Total number of cases in the London Hospitals . .	13,936	2602	17.8

Dr. Murchison found that of 27,051 cases collected from various sources, many of which have been included in the foregoing list, 4723 proved fatal, a death-rate of 17.45. Jaccoud, with a collection of 80,140 cases treated in Europe on the expectant plan, observed a mortality of 19.23 per cent. The General Hospital of Vienna, with 17,000 cases, has a mortality of 22.5; the hospital at Basle, with 1718 cases, a mortality of 27.3; and the principal Continental hospitals have, according to Dr. Cayley, a mortality varying between 16 and 25 per cent.

The English army statistics for six years, ending in 1877, are as follows:

	Cases.	Deaths.	Mortality.
On home service	545	131	24
On foreign service	1383	564	40.7
The Royal Navy for a period of six years, ending 1878 . . .	1414	110	26.5
Massachusetts General Hospital .	303	42	13.5

The statistics of the *Medical and Surgical History of the War of the Rebellion*, from 1862 to 1866, inclusive, show:

	Cases.	Deaths.	Mortality.
Among white troops . . .	75,368	27,056	35.9
Colored troops, 1864–1866 inclusive .	4094	2280	55.6

In the New York hospitals,[1] between January, 1877, and October, 1883, there were 1305 cases, with a percentage of mortality estimated by years, varying between a minimum of 20.1 per cent. in 1879 and a maximum of 30 per cent. in 1880.

The foregoing figures, covering a period terminating in 1884, show in general the results of the expectant and symptomatic treatment of enteric fever, although they probably include a small proportion of cases treated upon special antiseptic or antipyretic plans.

A second series of statistics, overlapping to some extent the foregoing in time and reaching down to the present, gives better results. They show the influence of the external application of cold as a therapeutic measure. Thus, Brand collected from various reliable sources 19,017 cases, treated by all kinds of cold baths, with a mortality of 7.8 per cent; Bouveret and Teissier, with a mixed expectant-symptomatic and antipyretic treatment (1873 to 1881), 629 cases, mortality 16.5 per cent.; and 1882 to 1887 inclusive, cold baths in severe cases, 376 cases, mortality 6.9 per cent.

Vogl's statistics, from the Military Hospital in Munich, are as follows: Expectant treatment from 1841 to 1868, 5484 cases, and a mortality of 20.7 per cent.; intermediate, with water, 1868 to 1881, 2841 cases, mortality 12.2 per cent.; and baths and internal antipyretics, 1875 to 1881, 702 cases, with a mortality of 7.6 per cent.

Ziemssen's statistics from 1877 to 1887 (graduated cold bath and antipyretics), show 2000 cases, with a mortality of 9.6 per cent.

In startling contrast to the above is a third series of statistics, dating back more than a quarter of a century, and including, first, the cases of Brand, and later of those who, under the force of incontrovertible facts, have gradually fallen into the line of treatment devised and so long advocated by him. Thus:

Teissier, 1887, strict cold bathing, 139 cases, mortality 5 per cent.

Vogl, in 1880, strict cold baths, 428 cases, mortality 2.7 per cent.; 1882 to 1887, strict cold baths, 141 cases, mortality 3.5 per cent.; 1882 to 1887 (a second series), increasing baths and the abolition of internal antipyretics, 144 cases, mortality 4.1 per cent.; Naunyn, strict cold baths, 145 cases, mortality 6.9 per cent.; Brand, cases collected from various sources, with strict cold baths, 2198 cases, mortality 1.7 per cent.

The last-named observer shows from an analysis of the same cases, omitting those not treated before the fifth day, 2150 cases, without a death.

The general statistics of the strict cold-water treatment show a reduction of the mortality to 3.9 per cent. These figures are obtained by Brand from twenty-three German and French designated sources with 5573 cases, this number undoubtedly containing many imperfectly-managed cases. (Baruch.)

The number treated strictly according to the method of Brand by himself, Jurgensen, Vogl, and others up to January, 1887, amounted to 1223 cases, of which 12 died, a mortality of 1 per cent., not one of the fatal cases having come under treatment before the fifth day.

That the modifications of the expectant-symptomatic method brought about by the use of antiseptics and antipyretics have not greatly reduced the death-rate is shown by the fact that in Philadelphia during

[1] Delafield: Medical Record, November 17, 1883.

the year 1889 there were reported to the registry office of the board of health 4631 cases, with 736 deaths, a mortality of 15.9 per cent.

The mortality statistics of enteric fever studied in connection with the prevalent methods of treatment justify the conclusions that under pure expectancy recovery will take place in about seventy per cent. of the cases; that about fifteen per cent. will die despite the treatment; and that the result in the remaining fifteen per cent. will depend to some extent upon the management of individual cases.

It is impossible to foresee at the onset of any particular case what its course is going to be, either as regards intensity or complications. The real objection to the expectant-symptomatic treatment is that it is not directed against the cause of the morbid manifestations. Too often the appearance of grave symptoms indicates mischief that is already past remedy. The aim of treatment should be not to control serious symptoms as they arise, but by acting upon the cause of the disease from the beginning to anticipate their development. This I have for some years insisted upon in speaking of the treatment by carbolic acid and iodine, originally suggested by Bartholow. If the claims made by Brand and his followers, that under the strict cold-bath treatment the course of the disease is essentially modified, that the symptoms are milder, that complications and sequelæ do not arise, and that the death-rate, as shown by large series of cases reported by a number of competent observers, undergoes the startling reduction indicated by the figures I have cited—if these claims can be substantiated, there can be no question as to the duty of the profession toward the sufferers from this disease.

We cannot disregard the array of facts marshalled in the literature of the past five years. That a routine treatment so novel should be officially recognized by the Prussian War Department is important testimony to its value. Still more important is the fact that French military surgeons who, as prisoners at the close of the Franco-Prussian war, had the opportunity to observe Brand's treatment at Stettin, adopted, and have since practised, this treatment in the military hospitals of their own country.

What, then, is the method of Brand? It consists in the following systematic procedure:

Whenever the temperature taken in the rectum reaches 102.2° F. (39° C.) the patient is placed in a bath of 65° F. A compress, wet with water about five degrees lower, is placed upon the head, or water at a lower temperature is poured upon the head and shoulders. The patient remains in the bath fifteen minutes, during which time he is systematically rubbed by the attendants and encouraged to rub himself. At the expiration of that time, he is removed from the bath, and wrapped in a coarse linen sheet over which a blanket is folded, the extremities being thoroughly dried and rubbed. A little wine or spirits is then given. This is repeated every three hours, unless the temperature remains below 102.2° F. The alimentation is liquid, nutritious, and carefully regulated. No drugs are administered.

Glénard[1] gives the following outline of the technique of the treatment by cold baths:

"If the diagnosis of typhoid fever is probable, recourse should be had to the baths, whatever may be the symptoms. The full tub should be placed in the ward or chamber, parallel to the bed at a distance of one or two metres, the floors properly protected by oilcloth, and a screen placed between the bed and the bath-tub. A sufficient quantity of water should be used to cover the patient's body to the neck. It should be of a temperature of from 64.4° to 68° F. (18° to 20° C.). The baths should be prepared without disturbance or noise. There should be placed on the floor near the head of the tub two pitchers of cold water of a temperature of from 46.4° to 50° F. (8° to 10° C.), each containing four or five quarts (litres). A glass of water should be at hand. The first bath should be given preferably about four o'clock in the afternoon, unless there is some urgent reason for selecting a different hour, and the physician should be present. The rectal temperature is taken, the urine is voided, and the patient is assisted into the full tub, the screen having been removed. If there is perspiration the patient is dried before entering the bath. Cold water from the pitchers is poured upon the head and the back of the neck, for one or two minutes, the amount being from two to three quarts (litres). Then a swallow of cold water or red wine is given. This being done, the whole surface of the body is briskly rubbed with a sponge or brush and the patient is made to rub his abdomen and chest. These frictions stimulate the peripheral circulation, prevent the accumulation of heat at any one point, moderate the sensation of cold, and help to pass the time; they are not indispensable. Shivering appears, as a general rule, in between eight and twelve minutes; this is a necessary evil to which too much attention is not to be paid. Toward the middle of the bath, or at its termination, cold water is again poured over the head and neck. The time occupied ought to be at least fifteen minutes, longer if the head is still warm and the cheeks red, or if the temperature of the patient was very high before the bath.

"The patient should leave the bath without precipitation. He cannot take cold, thoracic complications are caused by typhoid fever and not by

[1] Le Bulletin Médicale, February 26, 1888.

chilling. The air of the apartment should be pure and not too warm; the window should be opened in the intervals between the baths, during the bath it ought to be closed. On leaving the bath, the patient should be gently dried with a towel. The bed should be carefully made during each bath. If on returning to the bed shivering takes place, the limbs should be rubbed and a hot bottle placed at the patient's feet. A cold compress, covered with oil-silk or flannel, should be placed over the abdomen, and a little warm nourishment administered.

"Three-quarters of an hour after the bath the rectal temperature should again be taken. If, however, it is found to be below 101° F. (38.5° C.), it is not necessary to take it again for three hours.

"Alimentation should consist of the following articles: Milk diluted with coffee or tea or cocoa (a quarter of a litre at each administration); thoroughly cooked gruel, oatmeal, tapioca, or vermicelli; veal, mutton, or chicken broth, freed from fat when cold and reheated at the moment of administration. As a drink, pure cold water should be given; the indication for wine or spirits is urgent only in cases that are subjected to this treatment late in their course. If the patient does not sleep, or sleeps badly, he is to have a draught of iced water, and the abdominal compress is to be changed every quarter of an hour. The discharges from the bowels are to be preserved for inspection, and the total quantity of urine may be collected in the same vessel. Neither age, sex, menstruation, pregnancy, nor sweating (except that which occurs at the end of defervescence) in any way modifies the treatment. In women who are weaning their children, cold compresses should be applied to the breasts and frequently renewed. If diarrhœa persists, it is to be combated by cold compresses, which may be kept cold by the aid of a bladder of ice. If there is constipation, it is to be treated by cold enemata, and, if these fail, by enemata consisting of one part of cold water and one part of fresh ox-gall.

"When the temperature before the bath is very high, or if the fall forty-five minutes after the bath is less than 1.8° F. (1° C.), the bath must be prolonged to eighteen or twenty minutes. It is very rarely necessary to modify the general formula. After the temperature does not exceed 102.2° F. (39° C.), but yet reaches 101° F. (38.5° C.), it is necessary to treat these slight exacerbations by baths of 68° F. (20° C.), and of five minutes' duration in order to prevent the prolongation of the fever or the occurrence of relapse, and to shorten convalescence. If relapse occurs, it must be treated according to the general formula. When the temperature no longer exceeds 101° F. (38.5° C.), defervescence being established, the baths are discontinued, and the patient should be treated as convalescent, but is to be kept in bed until the temperature has not exceeded 100.4° F. (38° C.) for four days. He may then rise and in a short time walk in the open air; he may prolong his promenades according to his strength, and one will be struck by the rapidity with which his strength increases after every outing. Proper precautions are to be taken against cold. As to alimentation, already during defervescence there may be added to his soup, milk, or bouillon, either one or two raw eggs daily, or, a little later, one or two teaspoonfuls of scraped raw meat or a little toasted bread or biscuit; but the aliment must always be given in liquid form.

"The *régime* of the convalescence should be gradually established, and may consist of solid food after the temperature has not risen above 100.4° F. (38° C.) for four days. At this period the intervals between the feedings should be at first three hours during the day; afterward one regular meal daily may be given; and a little later the patient may have roast beef and fish, morning and evening, and bread in small quantities. The appetite is excellent, and it is necessary to control it. For the first two days of the convalescence the temperature is to be taken as before, after that, for a week, morning and evening. At the end of that time temperature observations may be discontinued.

"During the treatment by baths, one attendant is required for the day and one for the night; these duties may be fulfilled by members of the family. In a hospital one bath-tub may be made be used for a dozen patients, but it is better to use one for six patients. Two attendants are sufficient for twelve patients. It is not necessary to renew the water of the bath every three hours; once in twenty-four hours is sufficient. The patient treated from the beginning in this manner, never suffers from fæcal incontinence. As a rule, the patient should pass his water before entering the bath. During epidemics, the water of the bath, if it is not soiled, should serve for several patients, and should only be renewed two or three times a day."

This is the line of treatment to which, rigorously carried out, the extraordinary results which I have indicated are ascribed. That it seems heroic, thus briefly stated, cannot be denied. That it is heroic to those who see it practised for the first time, is more than true. Preconceived notions in regard to the management of typhoid cases are violated. The frequent disturbance for the purpose of taking temperatures and bathing, the fact that the patients are compelled to rise from their bed and with the aid of the attendants to step into the bath, the pallor, shivering, and the blueness of the extremities which shows itself during the course of the bath and continues for a varying time after the patient is put to

bed, demand conviction on the part of the physician, and the courage of conviction to continue.

It is only when the favorable effect upon the condition of the patient is seen, and when we reflect that in every hundred cases at least ten lives which would be lost under the expectant-symptomatic treatment are saved by strict cold bathing, that we dare to proceed.

What is the effect upon the course of the disease in cases treated from the beginning, that is, before the fifth day? Brand declares that the classical picture of typhoid fever is no longer seen. It may be objected to this that we do not get our cases before the fifth day; and even if they come under observation so early a positive diagnosis cannot always be made at that time. Only in garrison life and in epidemics will a treatment so radical be justifiable at the onset of a vague febrile disease. But Brand's statement is true of cases in which treatment is instituted at a later period, even so late as the middle of the second week. After six or eight baths the familiar picture is no longer seen. Delirium ceases, stupor gives way to light somnolence from which the patient is easily aroused with a bright expression and a clear mind. The tongue becomes moist and clean and remains so. There is desire for food, and very commonly a complaint of hunger. The abdomen is not tympanitic. Diarrhœa is rarely excessive or troublesome. In short, there remains, in the words of Brand, of the ordinary picture of typhoid nothing more than (*a*) a moderate fever, (*b*) an unimportant bronchial catarrh, (*c*) enlargement of the spleen, (*d*) the rose rash, and (*e*) infiltration of the intestinal glands. Everything else is prevented, and what might have been a severe case runs its course as a mild one if the patients are brought under treatment sufficiently early. Exceptions to this statement occur only when complications develop at the onset. There are rapid wasting and progressive anæmia, as in all prolonged febrile diseases, but severe enteric fever is changed to mild, the mild to a still milder form. This is brought about through the control of the temperature and by preventing disturbances of normal functions. The treatment is directed against the typhoid process as an entirety.

It does, it is true, not only reduce the temperature; the repetition of the bath also *controls* the temperature and keeps it down. But the bath does much more than this. It acts upon the nervous system in such a manner as to enable it to withstand the toxic influences of the infecting principle and the products of its evolution. This it doubtless does by the action of cold water upon the peripheral nerve-endings, a reflex stimulus being transmitted to the nerve-centres presiding over the circulation, respiration, digestion, excretion, and nutrition. This general reinforcement of function is shown by improved action of the heart, the first sound continuing distinct, the pulse being slower and more regular, and the improvement in the arterial tension showing itself by an absence of dicrotism; by persistence of appetite and digestive power, permitting freer alimentation without gastric disturbances; by deepening and slowing of the respiration; and by the absence of nervous symptoms, the increased excretion, the prevention of complications, and the rapid convalescence.

As was pointed out by Jürgensen, every attempt to deviate from the routine treatment as above laid down is followed by less satisfactory results. The treatment thus stands by itself as a definite procedure, to be distinguished from treatment by graduated baths, the cold pack, cold affusions, spraying, and other hydro-therapeutic measures. It is especially to be looked upon as something distinct and different from the antipyretic treatment. Upon this Brand and his followers insist.

In a service at the German Hospital of Philadelphia, extending from February 1st to July 15th of the current year, I had the opportunity to treat fifty cases of enteric fever. Of these, ten, for reasons chiefly connected with my want of experience in cold bathing, were treated either upon the expectant method or by means of carbolized iodine. The remaining forty were treated in accordance with the method of Brand, with two modifications: First, each case admitted prior to the tenth day of the attack received one or two laxative doses of calomel; second, the temperatures being taken in the axilla or mouth instead of in the rectum, the bath was regularly administered every three hours so long as the temperature reached 101.5° F. Otherwise the routine method above described was carried out in every particular.

Of the ten cases treated according to the old methods, one died, the patient being a man aged thirty-three years, admitted at the end of the second week of the attack, and already suffering from an intestinal hæmorrhage. Death occurred on the third day after his entrance to the ward.

Of the forty cases treated by bathing, all recovered. One case suffered two relapses and was much protracted. A second case suffered a single relapse. Intestinal hæmorrhage occurred in two cases. Upon the supervention of hæmorrhage bathing was discontinued. The average number of baths in each case was forty-two, the smallest number, ten, the largest number, one hundred and thirty-eight. These cases showed the favorable effects of bathing in every instance. As a rule, the patients did not object to the baths. When they did so, the objections ceased after a few baths had been administered. Complications were trifling, there were no sequelæ,

and in every case the convalescence was rapid and satisfactory.

As I have already taken up much time, I reserve an analysis of the details of these cases for future publication. Suffice it to say that the statements made by European observers were fully realized in this series of cases. Severe symptoms were mitigated, and mild cases ran a most favorable course.

For the sake of comparison I submit the statistics of some of the hospitals in Philadelphia for the same period of time and for a corresponding period of last year.

Hospital.	Year.	Number of cases.	Average number of days in hospital.	Number of deaths	Percentage of mortality.	Treatment.
The Pennsylvania Hospital,[1]	1889	31	38	5	16.1	Expectant-symptomatic.
Do.	1890	46	37	6	13.04	
The Episcopal Hospital,	1889	69	44	9	13.04	Mixed, intestinal antiseptic. Internal and external antipyretic; no baths.
Do.	1890	40	50	5	12.5	
St. Agnes Hospital,	1889	19	36	2	10.5	Expectant-symptomatic.
Do.	1890	15	34	4	26 6	
The German Hospital,	1889	41	36.5	4	9.75	Expectant-symptomatic.
Do.	1890	50	36.9	1	2	10 cases carbolized iodine; 40 strict cold baths.

Two hundred and seventy-one cases on expectant-symptomatic treatment with some antiseptics and applications of cold water, and with 36 deaths, a mortality of 13.29 per cent.; 40 cases with strict cold bathing; no deaths.

Since the 15th of July the strict cold-bath treatment has been uniformly followed in the German Hospital by my colleagues, Dr. Trau and Dr. Wolff, twenty-four cases having been treated without a death. The statistics of the German Hospital then as regards enteric fever are, from February 1, 1890, to this date, sixty-four cases treated by the cold baths without a death.

In conclusion, the objections which have been urged against this method of treatment are of the general nature of those usually brought forward against radical departures from established therapeutic customs.

First, the statistics are questioned. This objection can no longer be sustained. A large number of independent observers have fully confirmed the general results obtained by Brand.

[1] For these statistics I beg to express my thanks to Dr. Meigs, attending physician, and Dr. Scott, resident physicians of the Pennsylvania Hospital; to Dr. Knight and Dr. L. H. Adler, of the Episcopal Hospital; Dr. Grove, of St. Agnes; and Dr. Frese, chief resident physician at the German Hospital.

Second, it is asserted, *a priori*, that the typhoid of this country is not sufficiently severe to demand so radical a treatment. The statistics which I have presented sufficiently disprove this statement. Furthermore, it must be insisted upon that it is impossible to foresee the severity of any particular case at the outset of its course. The treatment by the method of Brand tends to make every case a curable one.

Third, another *a priori* objection is that patients in this country do not bear cold bathing as well as the French and Germans. It is a matter of surprise that this can be seriously urged as an objection to a treatment incontrovertibly shown to be as efficient as the one under discussion. Furthermore, our experience in the German Hospital of Philadelphia does not bear this objection out. It is true that certain cases do not react promptly, and that women react less promptly and less satisfactorily than men. In no case in my series, however, did the delay in reaction after the patient was put to bed cause the slightest apprehension on the part of the attendants.

Fourth, it is inconvenient, and demands an amount of experience and labor on the part of the attendants not easily to be had in private practice and in some public institutions. Objections of this nature cannot stand against the lowered rate of mortality.

Finally, the opposition of the patients themselves and of their friends may be urged as an obstacle to any attempt on the part of medical men to introduce the treatment into private practice. This is no real objection; it is a mere difficulty that will vanish so soon as the profession generally recognizes in the method an efficient means of saving many lives, and lends its weight to the advocacy of the plan among the people. These remarks are intended to contribute to that desirable end.

TREATMENT OF GENERAL SEPTIC PERITONITIS.[1]

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THE subject of the treatment of general septic peritonitis is full of interest to every surgeon, for prompt decision and action determine the fate of the patient. No wonder, then, that the alarm is repeatedly sounded to warn the general practitioner. It is not alone the cases that are lulled to rest and deceptive security by opiates which confront us, but often the most dangerous condition is that in which the patient is, without opiates, quiet, non-febrile and contented, expressing himself as much better, sub-

[1] Read before the Southern Surgical and Gynecological Association, November 12, 1890.

sequent to a chill and fever. In such conditions either suppurative peritonitis or a secondary abscess has probably commenced to form.

I recall two cases of appendicitis, abscess, and suppurative peritonitis which I was called to see during the last few months. One had used salines and opium alternately for a week, and had had fever and a chill on the day that I saw him. On the next day he was perfectly comfortable, he had no fever, the pulse was quiet, the tenderness had diminished, and there seemed to be improvement. An operation was performed, followed by irrigation and drainage, but the patient died two days later from septic peritonitis and secondary abscess.

The other case on the second day of the attack had a chill, which recurred in six hours, and was followed by collapse and delirium. After restoration by the use of hot bottles, hypodermic injections of whiskey and strychnine, I urged an operation, but freedom from pain, diminished tenderness, absence of fever, a fairly good pulse, some appetite, and no nausea, prevented the attending physician from consenting to an operation until the third day, when, although there was no change save an increase in the size of the tumor, he yielded. There was a considerable amount of pus in a sac, which was as thin as paper and formed by adhesions. The cavity was irrigated and drained, but the patient died in two days. At the autopsy a gangrenous condition of the intestines and suppurative peritonitis were found. Why this sudden cessation of pain and fever and the comfortable condition of the patient?

We all have noticed in puerperal peritonitis the absence of pain and the disproportion between the pathological condition and the slight amount of tenderness on pressure. Septic conditions may cause fever, restlessness, prostration, etc., but seldom pain; and when pain is present in puerperal peritonitis, it is only from pressure in a distended sac. Indeed, in this disease pain is so uncertain a symptom that he who relies upon it in diagnosis will, I fear, often be misled.

I believe that in the adult the three principal causes of general septic peritonitis are gunshot wounds, appendicitis, and pelvic inflammations. Of course, many other causes indirectly produce it, such as a blow resulting in abscess, tubercular inflammations, etc.; indeed, any internal or external influence producing an abscess, which ruptures, may cause it.

I fully concur with the views that Dr. Lydston has expressed in a recent article, in which he denies the existence of idiopathic peritonitis in children, and regards blows, falls, etc., as causes of suppurative peritonitis and appendicitis. I believe, as he does, that suppurative peritonitis is more frequent than we imagine, and that we often recognize it too late.

I will refer to gonorrhœa as a cause of septic peritonitis in women, and state that I have had case after case in which I could trace the peritonitis to nothing else. Now, it may be asked, Why does not gonorrhœa always produce septic peritonitis? One reason is, I think, that adhesions form between the ovaries and the tubes, and that these adhesions confine the gonorrhœa to the tubes. Gonorrhœa in the female does not always invade the uterus any more than in the male it invariably attacks the bladder.

Now, as to the treatment. I would first say that preventive operations should not be neglected. If either appendicitis, hepatic abscess, or pus-tubes is diagnosed, or if pus in the abdominal cavity is suspected, operate. Exploratory incisions may be dangerous, but far less so than inattention to either of the above conditions. If there is one fact established in surgery, it is the importance of evacuating pus, no matter in what part of the body it is found. Abdominal section, irrigation, and drainage is the accepted treatment.

You will often find not only extensive adhesions, but pus-sacs. Insert your fingers as gently as possible, separate the intestines carefully, yet effectually, irrigate thoroughly, and if bleeding is excessive pack the cavity with iodoform-gauze; if bleeding is not excessive, use drainage-tubes. The gauze can be removed in small amounts every day. The drainage-tube should be cleaned antiseptically every six or eight hours, and gently rotated. The time to remove it will be indicated in each case. Pus-sacs should be aspirated or, if possible, brought to the surface and emptied. Always be prepared, in case of injury to the bowel, to resect, anastomose, or treat as may be indicated. After operations I usually give a saline daily to prevent adhesions from re-forming.

In some cases you can do only a partial operation. In such tear as many adhesions as is prudent, irrigate, and after improvement in the general condition of the patient you will be able to complete the operation.

Again, in those cases in which there is extensive and distressing tympanites, there is a most troublesome condition to deal with. The muscular coat of the bowel is paralyzed by overdistention, and purgatives have little effect. In such cases I would be disposed to adopt the suggestion of Dr. Davis, namely, open the bowel and flush out with hot water.

Illustrative of the good that can be accomplished by the partial separation of adhesions, I will report a case which I was called to see in consultation three or four weeks ago:

The patient was a young married woman, and had never been pregnant. She had been treated for two weeks for fever, and was seemingly better, but later developed peritonitis, which spread rapidly, and was accompanied with constant pain, much aggravated by defæcation and urination. At the expiration of the fourth week I saw her. The doctor said she was better, yet 150 drops of laudanum had failed to give relief the previous night. Her stomach would retain nothing. Her abdomen was swollen, tympanitic, and fluctuating. I elicited from her husband that he was convalescing from an attack of gonorrhœa. I obtained consent to operate on the next day, and gave a saline, which caused two movements. I should have stated that the temperature was 102°; pulse 130. On the following day the temperature was still high, the pulse more frequent and feeble. The physicians present did not think she would live through the operation. However, I operated. The tissues bled at every cut. The peritoneum was firmly adherent to the abdominal walls; the bowels were generally adherent, and it was with great difficulty that I was able to introduce my finger. I broke up the adhesions as gently as possible, partially irrigated, and put in a drainage-tube. The breaking up of the adhesions caused considerable bleeding, the blood being mixed with pus. She reacted slowly, but on the following morning her pulse was less than 100 and temperature 99°. She continued to improve, a saline being given daily to prevent the adhesions from re-forming. On the seventh day I was confined to my bed and remained there a week. The patient, on my return, was suffering from pain, especially during defæcation and urination, but said that she had had no movement of the bowels, except a small one that morning, for five or six days. I gave her a full dose of sulphate of magnesium, and after six stools all her symptoms disappeared, and she was sitting up when I left her. I know I did an incomplete operation, but to have done more would have killed my patient. Should it become necessary, I can complete it now that she is more able to stand it.

Regarding gunshot wounds of the abdomen, I will only say that he who has once opened an abdomen for such an injury will not hesitate to operate when his second case is presented.

OPERATION FOR ANKYLOSIS OF THE TEMPORO-MAXILLARY ARTICULATION.

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ANKYLOSIS of the temporo-maxillary articulation may be the result of an injury, such as a severe sprain or concussion; or it may be due to arthritic inflammation, followed by plastic adhesions, which become converted into fibrous, cartilaginous, or osseous tissue.

If the ankylosis is caused by fibrous bands, these can be divided subcutaneously with a tenotome passed into the articulation, as has been done by Spariton.[1] The condyle has also often been excised, and with favorable results in most cases.

Mears[2] has proposed the operation of dividing the ramus of the jaw by an Adams's saw introduced through the mouth, and excising, in this way, the condyle with the coronoid process and sigmoid notch.

The operation, first proposed by Esmarch, of making an artificial joint in the lower jaw by the removal of a wedge-shaped piece of bone, has been successfully done a number of times. Indeed, most of the operations which have been performed for the relief of ankylosis of the temporo-maxillary articulation have had a fair percentage of successful results, though the methods varied. Even the plan of Rizzoli, of merely cutting through the jaw with powerful forceps introduced in the mouth, without removing any portion of bone, has been attended with success. The operations, however, in which a portion of bone is removed, and thus the formation of a false joint is facilitated, are preferable.

When there is complete ankylosis with entire loss of motion of the jaw, it is often difficult to determine on which side the lesion exists. And though the stiffness may have been primarily confined to one temporo-maxillary articulation, yet the other joint may become secondarily ankylosed from the changes following long-standing disease. It is probable that this occurred in the case which I am about to report, for the ankylosis must at first have been confined to the right side, since the first operation, performed on this side alone, was followed, for a short time, by good motion of the joint.

A man twenty-eight years old was admitted to the Pennsylvania Hospital, April, 1890, with complete ankylosis of the temporo-maxillary articulations. The upper teeth were firmly set upon the lower teeth, and he was unable to pass the blade of a penknife between them. He could take only liquid food. He suffered constantly from dyspepsia and from sore-throat, which could not be relieved by local treatment. His family history and his general personal history were good. Four years previously he had had an attack of acute articular rheumatism of several months' duration. Most of the joints of the body were affected, those of the jaw being the last attacked. The movements of the jaw rapidly became stiff, and by the time convalescence was complete he was unable to open his mouth at all. Four months after the appearance of complete ankylosis he was operated upon in New York, and, as he states, the condyle of the lower jaw on the right side was removed. After this he had fair motion of the jaw, but the stiffness gradually returned, and in two months was as complete as before operation.

The scar of this operation was barely perceptible

[1] Lancet, April 16, 1881.

[2] American Journal of the Medical Sciences, October, 1883.

upon the right cheek. The incisions were evidently similar to those which I subsequently made. There was no pain and no swelling of either temporo-maxillary articulation, and it was impossible to determine whether the ankylosis existed on only one or on both sides. He said that he thought the left joint was normal and that his disability was caused by ankylosis of the right side, as at the time of the first operation. There was no perceptible muscular rigidity or stiffness.

Operation.—A vertical incision was made in front of the right ear, and a horizontal one meeting the upper end of the first incision was carried along the lower border of the zygoma. The flap thus formed, with the parotid gland, was drawn down, and the posterior fibres of the masseter muscle were cleared away with a periosteal elevator. The position of the temporo-maxillary articulation was thus exposed. There was complete bony union between the neck of the lower jaw and the temporal bone, and no condyle was discovered. A small trephine was applied to the centre of the ramus immediately below the sigmoid notch, and a button of bone was removed. The bridges of bone on each side of this opening were then divided by a chisel.

As, notwithstanding this division of the right ramus, it was found impossible to open the mouth, and as the difficulty did not appear to be caused by any muscular contraction, a similar incision was made upon the left cheek. The upper part of the left ramus was exposed, and there was found to be firm bony union between the condyle and the temporal bone. A portion of the neck one-third of an inch in thickness was resected by means of a chain saw. As there then appeared to be some contraction of the temporal muscle which prevented free opening of the mouth, the attachment of this muscle to the coronoid process was divided. After this it was possible to separate easily the upper and lower incisor teeth a distance of more than one inch.

There was free, though easily controlled, bleeding during the operation. The wounds were drained with small rubber-tubes and closed with silkworm-gut sutures. Primary union took place. Seven days after the operation all dressings were removed, and the patient was able to eat the ordinary hospital diet, which included beefsteak of the average toughness.

As during sleep he was unable to keep the jaw in motion, and thus prevent union or adhesion and contraction, the jaws always became stiff during the night, and in the morning he found difficulty in opening the mouth to the same extent as on the previous evening. He was, therefore, given a wedge of rubber varying in thickness from one-half to one inch, to place between the teeth on retiring. Three weeks after the operation he was etherized and the mouth was forcibly opened to the fullest extent, in order to break thoroughly whatever adhesions might have formed. He continued to use the rubber wedge for four months, when the tendency to stiffness at night disappeared and he was able to do without it. When last seen, six months after the operation, he could eat any kind of food; he constantly chewed tobacco; and he had three-fourths of an inch space between the incisor teeth. He was perfectly comfortable, except that after much chewing he had slight pain in the region of the artificial joints. There seemed to be no tendency to any further closure of the mouth, and the scars upon the cheek caused no disfigurement.

A SUCCESSFUL CHOLECYSTECTOMY FOR IMPACTED GALL-STONES AND INTRAMURAL ABSCESS OF GALL-BLADDER.

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OPERATIVE procedures for the removal of the gall-bladder are sufficiently rare to render the following case of interest, and successful results are so seldom obtained that I desire to place this one on record:

History.—Mrs. L., white, aged thirty years. Always suffered from hysteria at her menstrual periods. She was under constant observation, needing medical aid at every menstrual flow. She was the mother of two healthy children. Vaginal examination disclosed a prolapsed left ovary, subacutely inflamed. At her menstrual periods she became very nervous, complaining of great pain in the left side of the pelvis, and having frequent convulsions, hysterical in their nature. Being susceptible to mental shock, the most trivial anxiety, such as the illness of her children, or any slight worry, would produce an hysterical attack. She was of costive habit, but to no great degree, and she had no disorder of the digestive tract. She went to the mountains during the summer of 1889, and gained several pounds in weight.

On June 2, 1890, I was summoned to see her and found that she had just returned from Savannah, Georgia, where three days previously she had been caught in a shower, during which her clothes became soaked. Her menstrual flow, which had just begun, was immediately checked. She had also received a severe mental shock by the sudden disclosure of some family secrets. I was not surprised to find her in an hysterical convulsion, and did not examine very carefully into the cause of the abdominal pain of which she complained. This pain was dull and aching in character, not acute or spasmodic. She was put upon the bromides, and things went well for seventy-four hours, when she had a severe rigor, followed by a rise of temperature to 104°, and profuse sweating. These symptoms presented themselves on the next day at about the same hour, and again on the third day, the temperature falling after the sweat.

Presumably a case of malarial quotidian fever, she was given quinine. This drug had no effect and the rigors became more frequent, the temperature remaining above 102°, and nearly stationary. A mercurial purgative was given, which emptied the bowels, and the temperature was controlled with phenacetin. On June 15th I discovered a tumor in

the right hypochondriac region extending obliquely to the middle line, and reaching an inch below the umbilicus. Its outlines were clearly definable, it being pear-shaped, with the base downward and forward. Her rigors and the elevation of temperature continuing, with the advice of Dr. Manning Simons, whose opinion as a consultant I sought, we passed a fine aspirating needle into the swelling and removed a few drops of sanious fluid. The abdomen was very tender, the slight manipulation necessary for this operation causing exquisite pain. The stools, which were frequent throughout the illness, were carefully examined. They were fluid, stained with bile, and threw no light on the diagnosis.

On the following morning the aspirating needle was again inserted, this time not in the base of the tumor, but in the side and from the median line. We now readily obtained a clear watery fluid of low specific gravity, and no color. This fluid was examined chemically and microscopically. It consisted of a strong solution of sodium chloride, and was devoid of albumin. The microscopical examination was negative, nothing being found save a few epithelial cells. Subsequently a large Dieulafoy's aspirator was used. The needle was entered at the point of the last puncture and two ounces of a thin muco-sanious fluid were obtained. This fluid contained a slight amount of pus and blood, otherwise the composition was the same as that previously obtained. For thirty-six hours the patient's condition improved. The temperature fell from 104° to 99°, and the rigors ceased. Locally the tenderness over the seat of the tumor increased, due probably to the punctures.

On the evening of June 22d the temperature again rose to 104° after a severe chill, and it was thought advisable to temporize no longer.

Operation, June 23, 1890.—The patient was anæsthetized with chloroform and placed upon the operating-table. An incision three and one-half inches in length was made over the tumor parallel to the median line, and corresponding to the centre of the right rectus muscle. It extended from the margin of the last true rib to one inch below the umbilicus. After the hæmorrhage was thoroughly controlled the peritoneum was divided on a director to the full length of the wound. The tumor lay just beneath the centre of the incision and extended upward along the under surface of the liver toward the posterior border. It was slightly adherent posteriorly, at its neck, and quite adherent superiorly to the under surface of the liver. After being carefully detached from these adhesions by passing the finger around it, the pedicle was transfixed and securely ligated with a stout silk ligature. The pedicle was then cut through and the tumor removed. The hæmorrhage, which was a slight general oozing, was readily controlled by the pressure of sponges soaked in hot bichloride solution. The peritoneum, which had become very much thickened by inflammation, was united with catgut and the edges of the abdominal wound were brought into perfect apposition with deep silver and superficial catgut sutures. The wound was dressed with iodoform-gauze and absorbent cotton supported with a flannel roller. The strictest antiseptic precautions were used throughout.

The tumor was the gall-bladder hypertrophied and thickened by inflammatory products. Its walls were from three-fourths to seven-eighths of an inch thick, and contained an abscess cavity posteriorly about the size of a large filbert. This abscess had opened into the cavity of the gall-bladder and had thinned its walls so that rupture into the general cavity of the peritoneum was imminent. The sac contained three large gall-stones, weighing respectively, seventy-nine, eighty, and eighty-one grains. These stones were polyhedral and showed well-marked facets. They completely filled the cavity and occluded the orifice of the duct. The cavity also contained two drachms of muco-pus unstained with bile, and no trace of biliary coloring matter was discernible. The hypertrophied cyst measured four and three-quarters inches in length by two and one-half inches in its greatest width.

Result.—The patient reacted well from the operation. On the third day a large evacuation of the bowels followed the administration of an enema. The fæces were well formed and of a bright yellow color. She retained nourishment well. On the morning of the fourth day she passed about four ounces of almost pure blood from the bowels. This hæmorrhage occurred again during the subsequent night. She then began to improve rapidly, her whole aspect becoming better. Her temperature, however, did not become normal, rising a degree to a degree and a half every evening.

At the end of a week the wound was dressed. It had healed superficially, but there was a suppurating tract extending upward through which flowed a considerable quantity of creamy pus. In a few days this pus became thin and mixed with bile, a temporary biliary fistula being established.

The flow of bile through the wound ceased in about ten days but the fistula remained patent. The temperature continued to rise in the evening and the case became complicated by a large bedsore which formed over the sacrum. On the forty-eighth day after the operation the silk ligature passed out through the fistulous tract. The temperature then returned to normal and the patient made a good recovery, being now, three and one-half months after the operation, quite well, and having gained twenty pounds in weight. Her bowels act well and the stools contain the usual amount of bile. She has had no return of hysterical symptoms.

REMARKS.—The diagnosis in this case was an extremely difficult one. We had a patient known to have a subacute ovaritis, presenting symptoms of sepsis and concealed abscess, with no sign of derangement of the liver or intestinal tract. The appearance of the tumor and the fluid aspirated therefrom suggested a hydatid growth which had broken down and suppurated. The gall-bladder had not performed its function for years and yet there had been no evidence of the fact.

The abdominal section was, therefore, from the very necessity of the case, more or less of an explor-

atory operation. That an abscess would be found was almost certain, and when the true nature of the case was revealed the gall-bladder and contained gall-stones were removed with the most gratifying result.

Monotony of detail must be forgiven in the history of this case, as the minutiæ are of more than ordinary interest.

CAUSES WHICH IMPERIL THE HEALTH OF THE AMERICAN GIRL, AND THE NECESSITY OF FEMALE HYGIENE.[1]

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To guide woman in greater safety through the dangers which beset her path in life is one of the highest and most sacred duties of our profession, as we may say that the care of woman is the care of the nation; the good health, mental, moral, and physical, of the woman and mother is the very foundation of our national growth and prosperity; and the conditions which tend to undermine that health cover a field of such extent and importance that the reader will readily realize the necessity of a limitation of my remarks.

I shall speak of the girl, the coming mother; of adolescence, the most important and interesting period of woman's life—the period of greatest functional activity, during which the foundation of future health is laid.

Girlhood is the most dangerous period, during which the organism, the budding mind, the developing system are susceptible to disturbing influences from without and within. It is the time when the clay is soft and the vessel is forming, when it yields most readily, and when trifling impressions are permanently recorded. It is in this period of school-life, the period of beginning social life, the period of learning trades, that the nervous energies of the female are most fully engaged, and her activity is concentrated on the brain-function, to the detriment of other functions, above all the developing sexual function, the central and most important, and at that time the most readily disturbed.

That I speak of the American girl is but natural, and I need hardly say that she is, moreover, subjected to a far greater number of disturbing influences than her sister in other lands, and more recklessly exposed to the very injuries which react most violently upon the female function.

[1] The President's Address to the Southern Surgical and Gynecological Association, November 11, 1890.

True as it generally is that woman is the exponent of a nation, and indicative of its development, of its growth, and of its depreciation, the American woman is more closely linked with the state and fate of her nation than the women of other countries.

Woman shares the febrile activity of our existence; she is a factor in our social and political economy; she participates in the rush and crush of the times to the utmost extent of her nerve-force and brain-power; but especially is this true of the American girl, as compared with the girls of other countries.

When I speak of the American girl I speak not of the extremes, not of the rich or the poor, but of the American girl of the great middle class of our cities—the typical American girl. Compare her to her hearty, strong-boned English sister; to the French girl raised within convent walls, carefully guarded, removed from the world until her marriage; or to the average German girl, reared amid the calmness of her surroundings, taught the solid rudiments of learning, and educated in household duties. Compare her even to her sister of the village or country, if the latter still be free from contaminating influences—from the nervous life of the city or boarding-school. You will recognize her at once. You will recognize the effect of brain-work and nerve-strain, the rush and mental activity of the day, the want of muscular training, the want of harmony in life, in training and education—mental, moral, and physical.

Whilst I will not agree with Ploss in his descriptions of the characteristics of the American girl, when he records the statements of an ungallant Yankee, that the American girl has no bones, no muscle, no vitality—only nerves; and what should we expect, he asked, when in the place of bread they eat chalk, in the place of wine they drink ice-water, when they wear tight corsets and shoes.

Even now one of our greatest authorities, and one of our keenest observers, Dr. S. Weir Mitchell, says that the American woman is unfit for her duties as a woman—not quite up to what nature asks of her as a wife and mother.

I believe that the essential causative factors to which the ill health of the American girl must be referred, are functional neglect or ignoring of her functions, excessive brain-work, and over-exertion of the nerves and emotions, with imperfect development of the muscular system, a want of harmony between development and exertion—physical, mental, and moral.

The peculiar organization of woman is too much ignored. It is claimed that woman is equal to man in her primitive state, and that her functions are physiologically and naturally not in want of any particular attention. Are these functions of such

paramount importance, and do they so completely control woman's life? This is a physiological problem upon the solution of which depend the relative capacity of woman for labor, mental and physical, and an understanding of the causes, influences, and remedies of diseases. The answer is readily found, if we observe with an unprejudiced eye the existing conditions.

Throughout both of the great kingdoms of nature the importance of the reproductive function in the female is demonstrated: it is strikingly demonstrated in the vegetable as well as in the animal life; it was recognized by the intuitive keenness of the most primitive people, and distinct expression is given to these fundamental facts in nature by the great lawgivers of ancient times.

Differences in sex are more or less well marked throughout the vegetable kingdom, and the supremacy of the reproductive function in the female, with the necessity of additional vitality for its perfect performance, is distinctly characterized. This is well exemplified in our common hemp, which, when the seed is moderately distributed over fertile soil, develops more than fifty per cent. of male plants, as a superabundance must be provided for the necessary waste which follows the distribution of the male pollen by the winds. If the seeds are thickly sown, so that the nutrition is insufficient or scant, the number of female plants will be diminished, as the supply requisite for their greater vitality is wanting; and, if densely crowded, the female plant may be altogether unable to develop. To the fruit-grower the great demand of vitality for the reproductive function is well known. The apple-tree with vigorous growth and foliage bears no fruit, its vitality being directed toward the one function of vegetable growth. To reduce this the tree is girdled, when, with a diminution of growth and foliage, it bears fruit. This harmonious development of the function is as necessary for the symmetrical growth of the plant as it is to the perfect development of the human being.

The great importance of the peculiar function of women, which it is the tendency of our enlightened nineteenth century to ignore, was fully appreciated by the people of olden times, and the necessity of functional hygiene for the welfare of the community was recognized to such an extent that it was made obligatory by laws of custom or of religion; and the highest penalties—expulsion from the community, everlasting damnation, and even death were imposed for certain transgressions which are thoughtlessly practised to-day by the refined and enlightened beings of our advanced civilization. The essence of such laws and customs of the savages of to-day, in fact of all primitive people from past to present, was rest, functional rest.

Instinct and experience have taught primitive people these truths, which in our day are but imperfectly realized even by medical science, and are denied by some who call the susceptibility of the woman of to-day to her ailments unnatural, and claim them to be altogether the result of civilization.

It is asserted that woman in her natural state is the physical equal of man, and the primitive or savage woman is constantly pointed to as an example of this supposed axiom.

Do those who make these assertions know how well the savage is aware of the weakness of woman and of her susceptibilities at certain periods of her life, and with what care he protects her from harm at these periods so that health may be retained? Religious superstition and the anger of the gods were invoked to secure this simple, but effective female hygiene—much-needed rest. Rest by isolation during the periods of functional activity, for nine days of each month, from thirty to ninety days after childbirth, and for five months at puberty. The budding of the maid into woman among savages is marked by a long period of rest and isolation, and her return to her tribe is celebrated by ceremonies of various kinds.

The importance of surrounding woman with certain precautions during the height of these great functional waves of her existence was appreciated by all people living in an approximately natural state, by all races at all times, and among their comparatively few religious customs, this one, affording rest to women, was among those most persistently adhered to. This idea was so deeply impressed that a mere touch at such periods was regarded as contaminating, and the girl was accordingly obliged to desist from all ordinary duties of life, and was removed from exertion and excitement by forced isolation. Where isolation is not customary, as we find it among people approaching civilization, a certain characteristic mark or signal is worn, for the wearer a passport of safety. In Eastern India young girls show their condition by a small piece of linen steeped in blood, and worn at the neck, as I myself have seen in the Nautch girls brought to this country for the purpose of exhibition. The Woloff negress wears a bright-colored folded cloth upon the cheek.

In the same manner the necessary rest is accorded to woman during the period of susceptibility for from three to four and even five days of each month throughout functional life. We find that either a hut is erected at some distance from the village, as among the Bedas in Cambodia, and on the isle of Yap, one of the West Caroline islands; or that a certain house is assigned as a place of seclusion within the village, as in New Caledonia, upon the coast of Guinea, and among the Kaffirs, the Hot-

tentots, and the American Indians. The Hindoos, the Nayers of Malabar, and others, assign to the woman a separate room in the house. In Japan, likewise, she is confined in a separate room, not permitted to eat with the family, and forbidden to visit even the temple, and given no possible excuse for leaving the house. Work of every kind and bathing are strictly forbidden, the dangers of cold water at this time being thoroughly appreciated by all these people, whilst it is an essential part of their religious teachings that the women should bathe before returning to their families and the village after the wave has passed. The laws of Moses and Zoroaster are almost identical, pointing to these great functional waves of woman's life as a working of the gods.

The laws of Zoroaster necessitated a seclusion of four nights for women, and, what is remarkable, she was then forced to determine her condition by examination, and if the flow had not completely ceased, indicating an abnormality, additional precautions were observed—she must remain five more nights, to which nine days were added, after which time she might cleanse herself and return to life.

The life of woman does not run smoothly like that of a man. It is characterized by marked periodicity, by ebbs and floods, by great life-waves, which are dominant in the sphere of her especial functions; waves of vascular tension and nerve excitement, marked by a heightened activity and susceptibility of her entire being, distinctly indicating that woman's periodical activity is not a local process, as we have been taught, but one involving the entire organization, as it was held to be by the ancients, and exerting a permanent influence upon that organism of whose condition and development it is indicative. The menstrual function involves the entire vascular and nervous systems, and may be said to be the central exchange of that great network of wires, the vasomotor nerves, the great sympathetic linking it most intimately with the brain and spinal cord and with every part of the system.

The most persistent period of nerve and vascular excitement is that of developing womanhood, when for months the system is in a period of unusual activity, and consequently of the highest susceptibility, which does not cease as speedily as its outward tokens disappear. Then follow the cyclical changes of mature activity, varied by the higher waves of active reproduction.

The functional wave slowly rises, accompanied with an increase of nerve activity and vascular tension, and a rise of temperature, as Mary Putman Jacobi tells us, of from 0.01° to 0.8° F., until it reaches the highest point; and it is during the decline of this wave that the depletion takes place, the distended vessels rupture and nature relieves herself, the temperature steadily falls, but does not reach the normal until after the cessation of all external symptoms.

Are we to believe that a function which so deeply implicates the entire system can be so completely disregarded? That it does not demand special care —greater care than functions less general, less susceptibie, less intimately connected with the organism? Are we to believe that this function can be ignored; and are we to be guided by the dangerous arguments of those who claim that precautions are unnecessary at this period?

In considering the initial causes of disease and their effect upon woman, we must analyze not alone this one function, but we must consider the entire being of woman, in order that we may apply the proper standard, and that we may not measure her capacity for labor, mental or physical, or her powers of endurance, with those of man.

Woman—the woman of our civilization—cannot be properly compared with man; differences of many kinds exist, the most obvious of which are of course external and anatomical. Her form and shape differ; her organism is a different one; individual organs are said to be more vascular and to contain more nerves; she is more emotional, more readily exhausted, and less able to bear continuous and prolonged application; more blood is produced, and the circulation and respiration are more active. The period of puberty is shorter and more marked, and the last stages of development are reached at an earlier period of life.

Consider her lighter frame, her nervous organization, her emotional nature; consider the constant activity of the reproductive functions, the influence of this sphere which dominates her entire being; consider the intimate connection of every organ, above all the spinal cord, with this reproductive centre, and then, need we wonder that injury befalls this sensitive organization when exposed to the intense and continuous nerve- and muscle-strain of our present system of education and labor, which is upon a basis of male vigor?

Whilst the evil is great, I am happy to say that an improvement in the physique of the American girl of the better classes has become evident in late years, due to progress of the science of hygiene, and its better understanding by the educated public, and perhaps by the introduction of sound physiological and hygienic doctrines in some of the more advanced schools, but above all to the new fad, the increased popularity of outdoor sports.

In the higher classes we mark this change, and we may be thankful for the change of fashion which has produced the result. The girl must have a good color, a healthy figure, a brisk walk, to be "in

the swim"; riding and walking, lawn tennis and rowing, even fencing, have become fashionable, and are working wonders upon the health of the American girl who can afford these luxuries—the same girl who twenty years ago drank vinegar to acquire a fashionable pallor and an early grave. Compare the swinging gait of the girl of to-day with the mincing walk and the Grecian bend of some years ago.

A beginning has been made, but the greatest difficulties are still to be overcome; the American girl has a just claim to the most perfect and harmonious development, mental, moral, and physical, by virtue of the invigorating influence of an intermingling of race and blood, the favorable hygienic possibilities of her life, and the freedom she is given. But the average girl is not what she might be, and I repeat that this is due to our habits of life and our methods of labor and education.

We must of necessity inquire whether the health of the girl suffers during school-life, or, rather, whether functional life is impaired by our present methods of education, and I must unhesitatingly say that it is, unfortunately, a question which is asked in different ways and distorted by the partisans of higher education for women.

Statistics of functional health during school-life are out of the question, and we must refer to a few general facts, and to our individual observation. How commonly do we see the once healthy girl returning from school—above all from the pernicious boarding-school—neurasthenic, with flushed face, cold feet, impaired digestion, backache, and painful and disordered functions, all of which symptoms gradually fade with the enjoyment and recreation of vacation, and return with the next session of school.

It is the American idea of "putting one through" which lays the foundation of evils which not only follow the individual through life, but pursue her descendants. It is the idea of finishing her education before the pleasures of society can be anticipated. It is the source of beginning functional disturbances. She is straining every nerve for the dangerous struggle of supremacy, and, cost what it may, her ambition must be gratified; she must graduate with honor before making her *début* in society, and even now her emotional nature is excited by the foretaste of its pleasures. Evenings which should be devoted to rest are given to boy visitors and dancing parties. Healthy recreations, outdoor exercise, and the necessary sleep are neglected; school gymnastics, calisthenics, or official recreation do not afford the healthful exercise needed. An increased quantity of blood is diverted to the brain, whilst the general supply is diminished and the circulation impaired; lassitude, malaise, and local trouble follow. Is it to be wondered at that she breaks down, and that the mothers best fitted to produce capable children fail to fulfil their destiny?

In boarding-schools enervating routine takes the place of social dissipation, but the results are the same, if not worse, as the girl is removed from her natural guardian and adviser—the mother. One statement from the pen of Dr. Goodell will best indicate the frequency of the injury. He tells us that he has been repeatedly asked by physicians attending such institutions whether it were possible that laundresses could have drugged the scholars unknown to them, in order to avoid the washing of soiled napkins: so common is the complete cessation of that essential function in the most critical period of the girl's life when she is removed from home influence with a view to securing the supposed better advantages. This is the state of affairs in common schools and boarding-schools, at the most critical epoch, from the age of twelve to eighteen years.

Let us see what the results of so-called higher education are. The showing is a better one, as we may see from the report of the Association of College Alumni who have investigated the present health of female college alumni as far as practicable. The health of these girls was very much the same as that of their parents, but was three per cent. better, constitutional weakness being mostly the cause of the disorders that existed. Overwork, accidents, and bad sanitary conditions would explain others. Among the college graduates the deterioration in health is two and one-half per cent. less than in the working girls of Boston at the same time.

Worry over studies alone caused no decline in health, whilst worry over personal affairs caused deterioration of health in ten per cent. of the students, and worry over studies and personal affairs combined, in fifteen per cent., but the health of those who declined while in college has more than recovered in later years. We find but a very slight falling off, and that only from excellent to fair health, in college life, as we might expect if we consider that it is only the healthier and stronger girls who venture upon higher education, and that one-half of these avoided exertion during the menstrual period, and saw but little society. We must bear in mind that college education is an innovation of recent date, in the establishment of which modern hygiene has been consulted, and the study and recreation as well as the health of the pupil, are subject to constant medical supervision; moreover, in some of the more advanced institutions, good health is made a condition of admission, and yet Miss Howe, of the College Alumni Committee, finds that only four hundred and ninety-six out of one thousand

graduates married between the ages of fifteen and sixty, and she comes to the conclusion that the tendency of higher education for women is to celibacy. Whether this is from choice or from necessity—for reasons moral or physical—she does not say; it appears to be the natural result of misdirected culture.

The injurious effect of our present system of education upon the essential function of woman must be apparent if we bear in mind that in the period of life from twelve to eighteen, and eighteen to twenty-one years, nutrition should be directed to the essential organs of female life, whilst all other organs are in active growth, and are demanding increased supply. It is then that an increased expenditure of vital energy is demanded, and that the brain concentrates upon itself the nutrient fluid; it is at this time when the system is most susceptible to disturbing influences of all kinds, and in an almost explosive state during one week of each month, that it is subjected to the greatest strain, to excessive brain-work, nervous and emotional excitement, and even physical injuries.

Are the results not natural when we consider that girls in this dangerous period of life spend more time in study than boys, and that boys do have healthy recreation, that the Greeks even withheld male children from study until the tenth year, while laying a solid foundation for a healthy physical system and a harmonious development of the functions.

Injuries are wrought by our systems of education, and very similar are the injurious effects of our systems of labor upon the developing girl and the reproductive functions, but less obscure and more marked than those of education, for the reason that the unfortunate sufferer cannot, like the school-girl, withdraw at will, or when the evidences of injury are distinctly felt. She is obliged to continue until she is prostrated. It is not manual labor only; it is not alone wear and tear on muscle which tells—nerve-wear is still worse. The effects are seen in girls in the employments now so much affected as a so-called higher class of female labor—in telephone and telegraph offices—clerks, type-setters, and stenographers. Examples of this kind we unfortunately see every day.

A most interesting report is given by the Bureau of Labor Statistics of 1875, on the special effect of certain forms of employment on the health of women. From this I shall quote, as it is, perhaps, the first effort to regard the cardinal re'ation which labor bears to essential attributes of the forming woman, on which hinge all other vital results. The alarm-bell, the first evidence of coming trouble, is menstrual disturbance; and how rapidly nerve-strain reacts upon the functions we may see by the effects of an unexpected rush of business suddenly befalling a female clerk in good health, during the period of functional activity. Complete cessation of the flow, and general prostration follow, with slow and imperfect recovery.

In the main these functional disturbances are produced by over-work, with innutritious food and non-sanitary association—labor of both body and mind—the effects of disease primarily produced by early employment during animal growth, the regular and long-continued employment of the plastic, undeveloped girl, and the long day's work with unremitting attention. As causative errors in the management of mental or manual labor are mentioned in this most admirable report the following:

1. *a.* Youth unequal to the work.
   b. Impairment of animal growth.
   c. A constrained position.
2. *a.* A disregard of ultimate injuries.
   b. Unbroken application without vacation for a long term.
   c. Depression and disease inviting demands on immature vitality.
3. Employment in unsuitable occupation for condition of body and mind.
4. *a.* Unduly long hours.
   b. Concentration of vital energies, involving extreme nerve-tension.
   c. Unfavorable sanitary surroundings.

Constant injury is wrought by the error of system in schoolroom and workshop, but potent and more directly evident causes of ill health and functional disturbance in the growing girl exist in our daily life, our social customs, and our habits of dress. To them I will not refer; they are too well known.

The constriction and compression of the corset, the dragging weight of the skirt, the circulation-impeding garter, the insufficient covering of low-necked dresses, and of thin stockings and shoes, the total absence of protection where it is most needed, and the absence of drawers.

Among our social customs there are many which bring ruin to woman. I cannot even touch upon them all; there is but one of which I shall speak, and that is the most dangerous of all, more or less underlying all other causes of disease; it is the ignoring of the function of woman by woman—the mother's ignorance of its import. Fearful are the consequences of woman's ignorance, the calamities which follow the course of the misguided mother, swift, certain, and lasting the penalties inflicted upon the unadvised or ill-advised girl, whose one great misfortune is ignorance. She steps into the unknown sphere of womanhood, and in darkness she pursues its irregular path; and fortunate is she who by chance does not stumble.

Many who might be saved by proper manage-

ment during the transition from adolescence to maturity, now fall victims to their ignorance, and no words of mine could be more convincing than the data given by Tilt as far back as 1853, in his admirable work on the *Elements of Health and the Principle of Female Hygiene*, which shows how many are injured by the unexpected appearance of the unknown function.

Great is the danger in all classes, be it from ignorance or modesty, and most susceptible is the highly-strung nervous system of refined organization. Even though the bark float in safety through that first stormy epoch of life, it is constantly endangered, most of all from the ceaseless crash of the ever-recurring waves of functional activity, and it remains in need of guidance until it has passed through a final storm into calmer waters. The mother is the pilot, and functional hygiene the guiding chart, and the physician the engineer who maps it out.

I cannot exaggerate the danger to the health of the susceptible girl, from each wave of functional activity. The greatest danger is during the height of the wave—that period of greatest activity throughout the entire system, the period of vascular pressure and nerve excitement, which threatens her functions as well as does the era marked by local depletion and depression, the decline of the wave.

So common are the injuries to the health of woman at this epoch, that I need state but a few of the examples which have come under observation during the writing of this paper,—in fact, I may say, almost upon this very day. Fright, nervous and emotional excitement, and exposure to cold have brought injury to many at this time. What is more natural than that the anxious girl should seek to check the bleeding wound, as she supposes? For this purpose the use of cold washes and applications is common, and some even seek to stop the flow by a cold bath, as was done by a now careful mother, who lay long at the point of death from the result of such indiscretion, and slowly by years of care, regained her health. The terrible warning has not been lost, and mindful of her own experience she has taught her children a lesson which but few are fortunate enough to learn.

How many, passing in safety through the first ordeal, are ruined by an indiscretion, or an exposure at a later period. Many a vigorous frame has been broken, health has been ruined, and death even caused, by disturbance of the function during its period of activity, by exposure, by cold, by physical or mental exertion, by nerve or emotional excitement. A cold foot-bath during the period, a dance in a low-neck dress, a walk in rain or snow, a hard day's work of mind or muscle, and excitement of heart or head has made an invalid of many a previously healthy girl, by its influence on this omnipotent function.

CONCLUSION.—I have endeavored to show that the health of the American girl is threatened and impaired by causes more or less avoidable, as they are due to our methods of life, of training, and of education; that the physique of this girl, who is most favorably situated, is imperfect; that her brain is overworked, her nerve power exhausted, her function impaired, and reproduction endangered; all by reason of the susceptibility of her peculiar organization, and the increased impressionability of the sensitive system during the years of development, in which it is subjected to the most severe strain.

Such is the fact: What is the remedy? Condition and cause make the remedy self-evident. Let me briefly review the conditions as we have found them. A perfectly-organized being, in the very beginning of woman's existence, waning with the rise of the great wave of functional life during the period of functional development; showing nerve and physical prostration, with impaired circulation and digestion, imperfect menstruation, and diminished reproductive power; neurasthenia and functional disturbances constantly intermingled as cause and effect. These unfortunate results are brought about, in the main, by more or less similar influences, viz.: 1. Excessive brain-work and nerve-strain, with neglect of the physical system in education. 2. Nerve-strain and partial or incomplete muscular activity in labor; both influences which are inseparably connected with, and complicated by, independently potent causes. 3. Ignoring and neglecting functional hygiene. 4. The physical and emotional strain of society, and the improprieties of dress and over-stimulation of the senses.

The remedy is attention to woman's peculiar organization and to the cyclical waves of her dominant function; or, in other words, harmonious development and occupation of nerve and muscle; diminished brain-work and nerve-stimulation with increased and coördinate physical exercise; increased protection and diminished compression of dress; and self-knowledge and individual care during periods of heightened susceptibility. Changes are necessary in custom and fashion, in methods of labor and education. Whilst each individual, and each calling, is a law unto itself, I may say, in a general way, that we should endeavor to obtain the end of education in its widest senses, the development of all functions and faculties, to render the girl in every way fit for the life she is to enter—"to render youth beautiful, healthful, strong, and honest."

An approximately harmonious co-education of mind and body should be reached with coincident

maintenance of proper hygienic conditions. The nerve and emotional strain of class competition must be abolished; the stress of constant work, the train of thought and the routine of regulation must be broken; lungs and heart should be educated, rather than memory; the nerve-strain varied by healthful pleasure and physical exercise in the open air, and relieved more or less, according to individual necessities, during periods of heightened susceptibility.

Whilst the initial causes of ill-health in the schoolgirl may be readily overcome, the dangers which beset the laboring girl, though equally evident, are more difficult to remove. The same necessity exists for individual care, upon the height of the functional wave and during its period of decline; and the same necessity for a proper coördination of labor, physical and mental. There is the same danger from constant application, from the strain of one part, one function or organ, to the exclusion of others. Nerve-tension is even more continuous and intense, and muscular exertion limited to individual muscles. The years of development should be respected and the continuity of labor broken, and rest and change afforded frequently for short periods. Much good might be done by changes in dress, and last, but not least, by self-knowledge.

I will close with a plea for the self-care of the girl, and for her proper physiological instruction by the mother, which alone will mitigate or remove the initial cause of many of her ailments. I wish to impress upon the mother that the perfect development of the female function, and the maintenance of this function, once developed, in a healthy condition, are essential to the perfect development of the girl and the perfect health of the woman; that self-care and well-regulated hygiene form the foundation of her well-being, and that it is the mother's first duty so to guard herself and so guard her daughter.

MEDICAL PROGRESS.

The Treatment of Boils.—VEIEL (*Monatshefte für praktische Dermatologie*, Oct. 15, 1890) admits that we already have efficient antiseptic means for the treatment of furuncle, such as Biddle's method of injecting with a hypodermic syringe three-per-cent. carbolic acid solution, Lewin's method of cauterizing with nitrate of silver, and the application of Unna's sublimate paste; but he thinks that these methods are too painful for general use, particularly when more than one boil is present. In the place of these the author uses a paste composed of equal parts of zinc oxide and vaseline, and four per cent. of boric acid. The ointment is thoroughly rubbed into the skin around the boil three times daily, and is also thickly spread upon lint and applied. In cases of general furunculosis the whole body is rubbed with the ointment.

Treatment of Cholera Infantum.—DR. LEONARD G. BROUGHTON, of Reidsville, N. C., recommends the following mixture in severe cases of cholera infantum with profuse and watery stools:

℞.—Salicylate of bismuth . . 2 drachms.
Sulpho-carbolate of zinc . . 4 grains.
Chalk mixture . . . 1 ounce.
Paregoric } of each . . ½ " .—M.
Water }

One drachm of this should be given every two hours until the bowels are controlled, after which the following is prescribed:

℞.—Calomel . . . . . 1 grain.
Sulpho-carbolate of sodium . . 20 grains.
Saccharated pepsin (P. D. & Co.) . 19 "

Divide in ten powders and give one every three hours. If the stomach is not irritable, sulpho-carbolate of zinc is substituted for the sodium salt in the last prescription. —*Therapeutic Gazette*, November 15, 1890.

Treatment of Hæmorrhoids by Cold Water.—According to *La Semaine Médicale*, DR. ALVIN employs very cold water for the pain, tenesmus, and spasm of the sphincter ani muscle provoked by congested hæmorrhoids. The water is applied to the anal region by means of a sponge. This method is very successful when continued for a number of days, and as a result the growths decrease in size, and there is general relief from all the unpleasant symptoms. These results are practically identical with those obtained by Dr. J. William White, of Philadelphia, whose paper appeared in THE MEDICAL NEWS some months ago.

An Efficient Method of Removing Foreign Bodies from the Nose.—DR. S. JOHNSON TAYLOR (*Lancet*, November 8, 1890) describes the following method of removing foreign bodies from the nose, which was successful in the case of a child of three years with a large bead in the nostril. The procedure is simply Politzer's method of inflation through the unobstructed nostril:

The nozzle of the Politzer bag is introduced into the nostril which does not contain the foreign body, and if the patient is old enough he is requested to swallow a mouthful of water. During the act of swallowing the bag is vigorously compressed, the escape of air from around the nozzle being prevented by grasping the nose with the thumb and forefinger. At the moment of compressing the bag the foreign body will probably be blown out. In the case of a young infant the compression should be made while the child is crying.

The Treatment of Enlargement of the Spleen.—MOSLER (*Wiener medicinische Wochenschrift*) writes that all enlargements of the spleen, irrespective of their nature, size, and duration, are frequently associated with a hæmorrhagic diathesis, which may not have become apparent. For this reason he disapproves of any operative procedure for the removal of the organ, and for some time has used a variety of other measures, chiefly injections, to reduce the swelling. He at first tried parenchymatous injections, by means of a syringe with a long needle, of weak carbolic acid solution. Later he in-

jected pure Fowler's solution with better results—decrease in the size of the organ. Injections of iodine and of quinine he considers dangerous and he has not tried, nor does he approve of the injection of ergot and its preparations. He believes that the cases suitable for injection are those in which the spleen is hard and not associated with extreme anæmia. Fowler's solution, he thinks, is better than the numerous other drugs which have been recommended for the purpose. The dangers of the injection are diminished by applying an ice-bag to the splenic region for an hour or two before and after the operation. — *Centralblatt für Chirurgie*, October 11, 1890.

The Use of Small Doses of Antifebrin.—In the treatment of fevers which are accompanied with cyanosis and collapse, PROFESSOR SAHLI, of Berne, employs minute doses of antifebrin, believing that the effect on the temperature can be thus obtained without the disagreeable symptoms attending the administration of large doses of quinine. Antifebrin acts rapidly and effectively in small quantities; on the contrary, quinine has no action on the febrile state when administered in minute doses, and may produce untoward effects from its accumulation in the system. Sahli's observations, comprising eleven cases, have been collected by Favrat in a recent work, and show that antifebrin in small doses is very efficient in combating fevers. The drug was given in doses of from 5 to 10 centigrammes in the form of pilules. Cases of pulmonary phthisis and of typhoid fever were decidedly influenced by antifebrin, and while the drug reduced the temperature, it produced at the same time a sensation of comfort. It prevented sudden exacerbations, and only in two cases were untoward effects noticed, such as cyanosis, but vomiting and digestive troubles were never observed. The same good results were obtained in the treatment of typhoid fever. In young children the initial dose should not exceed two centigrammes. The drug, of course, does not influence complications, and in phthisis, for example, neither the progress of the disease nor the cough is prevented. It is the fever alone that antifebrin attacks, and thus prepares the organism, as it were, to resist more successfully the other symptoms of the disease. The higher the temperature the more decided is the action of antifebrin. It was observed that a temperature of 39° C. could be reduced 1.9° C. by a dose of 10 centigrammes. In the period of decline the drug appeared to exercise the same action, but less markedly.—*La Médecine Moderne*, September 25, 1890.

Injection for Seat-worms.—The *Annales of Gynæcology and Pædiatry* quotes the following prescription to remove seat-worms:

℞.—Tincture of rhubarb	. . .	30 drops.
Carbonate of magnesium	. .	3 grains.
Tincture of ginger	. . .	1 drop.
Water	. . . . .	4 ounces.

The mixture should be warmed and used as an injection, repeating three or four times in twenty-four hours.

A Simple Method of Estimating Fat and Casein in Milk.—DR. J. B. NIAS (*Lancet*, November 15, 1890) has devised the following convenient method of estimating the fat and casein in milk in connection with the feeding of infants:

Place some of the milk in a test-tube with a piece of red litmus-paper, add a drop or two of liquor potassæ—enough to render the milk distinctly alkaline as shown by blueing of the litmus paper—and boil. Set aside in a warm place, when the fat will rise to the top, a small but constant percentage remaining behind. The proportions can be determined by a graduated rule placed at the side of the tube. Remove the layer of fat with a small glass pipette, add sufficient acetic acid to redden the litmus-paper, boil, and set aside in a warm place. The whole of the proteids will be precipitated and the relative proportion can again be determined by the graduated rule.

Albuminuria in Children.—DR. SEYOURNET (*L'Union Médicale du Nord-Est*) describes a form of albuminuria in children which he thinks is not infrequent. It differs from scarlatinal albuminuria. He has studied the disease in children between the ages of eleven and sixteen months. Many of the patients were bottle-fed and had been given improper food, which caused distention of the stomach, intestinal catarrh with vomiting and diarrhœa, or in a few instances enlargement of the liver. The author believes that the albuminuria is toxic and due to certain substances generated by abnormal fermentation in the intestines, the absorption of these substances causing congestion or inflammation of the kidneys. The disease was usually accompanied with anuria, and in some cases the daily amount of urine did not exceed one-half ounce. A marked symptom was œdema of the feet, occasionally extending to the eyelids and face. The duration of the disease was two to four weeks. The treatment consisted in the administration of milk to which lime-water was sometimes added; salicylate of bismuth to disinfect the intestines; gentle aperients when there was vomiting, and systematic massage of the lumbar region in order to reduce the congestion of the kidneys.—*Lancet*, November 15, 1890.

Injection for Cancer of the Bladder.—

℞.—Iodoform, Glycerin	of each . .	1 ounce.
Distilled water	. . .	1 drachm.
Gum tragacanth	. . .	2 grains.—M.

Add a teaspoonful of this mixture to a pint of hot water. The bladder is first to be washed out with water as hot as can be borne, after which the iodoform mixture just named may be injected, and then permitted to escape. These injections should be repeated three times a day; and it is worthy of remark that after three or four injections very great relief generally ensues.

Prescription for the Prevention of Dental Caries.—

℞.—Tannic acid	. . .	75 grains.
Tincture of iodine	. .	1 drachm.
Tincture of myrrh	. .	1 "
Iodide of potassium	.	15 grains.
Rose-water	. . .	6 ounces.—M.

Make into a solution and use a teaspoonful in a wineglassful of hot water as a mouth-wash.

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SATURDAY, DECEMBER 6, 1890.

PYOKTANIN IN DISEASES OF THE EYE.

ALTHOUGH a mass of clinical and experimental evidence in regard to the antiseptic and therapeutic qualities of pyoktanin has been published since its introduction by Stilling, we are by no means in a position to know the exact value of the drug. We are confronted on the one hand by the claims of the discoverer that pyoktanin is devoid of injurious effects upon the animal economy, that it is destructive to microörganisms, and that it is rapidly diffusible in healthy and in diseased animal tissues; and on the other by those who not only have failed to obtain the usual results from its use, but warn against its indiscriminate employment. The many diseases of the external coats of the eye and its appendages, probably largely dependent upon microbic infection, should afford an excellent field for studying the effects of this new claimant for antiseptic and therapeutic favor. Here we are at once met by discordant views. Stilling, as we all know, reported rapid cure of blepharitis, eczema of the lids, conjunctivitis—simple and phlyctenular—corneal ulcer, marginal and parenchymatous keratitis, serous iritis, and even disseminated choroiditis. Bayer, after its use in forty-six cases of scrofulous pannus, various types of corneal ulcer, dacryocystitis, parenchymatous keratitis, iritis, and sympathetic iridocystitis, came to the conclusion that the excellent qualities attributed by Stilling to this aniline dye did not exist in fact; and, moreover, in addition to disagreeable discolorations, positively harmful results might follow its application.

Quite recently some very careful clinical observations have appeared on this side of the water. Thus Dr. G. M. Gould (*University Medical Magazine*, December, 1890) reports his results in the eye wards of the Philadelphia Hospital, results which are particularly valuable, because this observer, wherever possible, treated one affected eye with pyoktanin, and the other with either nitrate of silver or bichloride of mercury. In trachoma the drug was without noticeable effect, and in some instances, owing to a species of desiccating effect, injurious. In gonorrhœal ophthalmia nitrate of silver was the preferable drug, and in corneal ulcerations other substances, especially eserine, produced far better results. In dacryocystitis, lachrymal conjunctivitis, unhealthy orbital cavities, and chronic soft leucomata, the sequelæ of interstitial keratitis, pannus, and like affections, pyoktanin did excellent service. Dr. Gould is particularly strong in his praise of the efficacy of the drug in chronically unhealthy conditions of the lachrymal excreting apparatus. Dr. W. Cheatham (*The Cincinnati Lancet-Clinic*, November 15, 1890) observed numbers of cases of the milder conjunctival affections readily yield to solutions of pyoktanin, and instances of trachoma, unaffected by the usual remedies, showed remarkable changes for the better under the daily application of the pyoktanin pencil. Cheatham and Gould are in accord that the remedy is of unusual service in muco-purulent inflammation of the tear-sac.

It will be remembered that Stilling states that pyoktanin dilates the pupil. One of Cheatham's cases affords an interesting confirmation of this fact—an example of interstitial keratitis in which atropine failed to produce its physiological effect upon the pupil, but when it was employed in conjunction with pyoktanin the desired mydriasis was secured.

We have used pyoktanin quite freely, and are in entire accord with those observers who find it of excellent service in diseases of the lachrymal passages, and believe that we have never obtained equal results with any other drug. It is a good application in the various types of inflammation of the conjunctiva associated with the formation of pus, but not better than several other standard remedies. We have failed to observe any curative effect in other diseases of the eye.

Pyoktanin may be prescribed either in the form of the blue or the yellow variety, and used in a solution, as a pencil, or in powder. Solutions are most desirable in acute conjunctivitis, dacryocystitis, etc., but in chronic ophthalmia, trachoma, and old fistulous openings into the lachrymal sac, the direct application of the pencil would seem preferable. The intense discoloration which blue pyoktanin produces is an objection, but the stains may be removed from the skin by scrubbing them with alcohol and water.

KOCH'S DISCOVERY.

THE dispatches which are being constantly received from Berlin tell us nothing of importance in regard to the emyloyment of Koch's remedy for tuberculosis, and time has not elapsed in which to determine the value of the treatment. No one beyond the boundary-line of Germany has as yet received any of the lymph, except Dr. Watson Cheyne, of London, and one or two Viennese physicians. The introduction of a quantity of it into France, sent to Pasteur by Koch, was prohibited on the ground that it was a medicinal agent of unknown composition.

In other columns will be found accounts of various cases treated by von Bergmann, Levy, Fräntzel, and Gerhardt which are of great interest.

We are glad to announce that of the first three American physicians to register in Berlin, our special correspondent, Dr. John Guitéras, the Professor of Pathology in the University of Pennsylvania, is one, that Dr. Dixon, representing the Jefferson Medical College, is the other, while Dr. Herring, of New York, is the third.

Dr. Guitéras goes to Berlin prepared to keep our readers fully informed of Koch's work and its results by letter and cable.

CORRESPONDENCE.

ATLANTA.

To the Editor of THE MEDICAL NEWS,

SIR: The Southern Surgical and Gynecological Association, which recently met here, was a great success, and, in the language of Dr. Hunter McGuire, "the Association came into the world a lusty infant, and its cry was heard all over the South." The papers read and the discussions would have done credit to any medical body. The officers have been uniformly efficient. Dr. Hunter McGuire, who was the first President of the Association, has an international reputation as a surgeon. The Secretary of the Association—in fact, almost the organizer of it, Dr. W. E. B. Davis, of Birmingham, Alabama, is one of the most tireless and enthusiastic workers in America. He is a man of high literary attainments and great personal magnetism, and he has linked with his magnetism an unsurpassed energy.

Perhaps no man was better fitted to occupy the executive chair than the retiring President, Dr. George J. Engelmann, of St. Louis. Dr. Engelmann was born in St. Louis in 1847. He was graduated from Washington University, and from that college received the degree of Master of Arts. To obtain his medical education he studied for six years in Europe. He is a graduate of the Berlin University, from which he received the degree of Doctor of Medicine. He is also a graduate of the Vienna University, which conferred upon him the degree of Master of Obstetrics. During the greater part of the Franco-Prussian war he served before Metz, in the hospitals of Lyons, and in the reserve hospitals in the University of Berlin. At the close of the war he returned to this country, resuming the practice of medicine in his native city in 1873, and has since been connected in various capacities with the medical colleges there. He is now Professor of Gynecology in the Missouri Medical College, President of the St. Louis Obstetrical and Gynecological Societies, and was Honorary President of the Gynecological Section of the International Medical Congress, which met at Copenhagen. Dr. Engelmann commenced practice as a general practitioner, but gradually drifted into gynecological work. Finding his work in this direction assuming gigantic proportions, he abandoned his general practice, and has since devoted his entire attention to obstetrics and diseases of women.

His successor as President of the Southern Surgical and Gynecological Association, Dr. L. S. McMurtry, is a native of Kentucky and a graduate of Centre College of that State. He was graduated in medicine by the University of Louisiana, and afterward studied at the University of the City of New York. He was Professor of Anatomy in the Kentucky School of Medicine for several years, and is now Surgeon to the Saints Mary and Elizabeth Hospital of Louisville. Two years ago he was President of the Kentucky State Medical Society. Dr. McMurtry has made numerous contributions to medical literature, chiefly relating to abdominal surgery and the diseases of women. He is a Fellow of the Obstetrical Society of Edinburgh, and is about thirty-eight years of age.

The Association is now in the third year of its existence, it having been organized in Birmingham, Alabama, in 1887. It has been successful from its inception, and is steadily increasing in membership, which will be limited to one hundred. It is a Southern organization, but it is not sectional in the *political* meaning of the word. It will take in all good men, whether from the North or South. But the intention of its organizers was that all its meetings should be held in the South. The North has its organizations, from which Southern men have in the past been practically frozen out, and they have been unable to obtain the benefit of an interchange of views and mutual discussions of important medical and surgical questions.

Dr. Engelmann tendered a lunch to the members of the Association, while the Capital City Club held a reception and tendered the Association a banquet, which

was one of the most elaborate affairs of its kind ever given in Atlanta.

Many visiting members of the Association were entertained by resident members.

Dr. Hunter P. Cooper has just been appointed surgeon for the Georgia Railroad, and will enter upon the discharge of his duties at once. He is one of Atlanta's most successful and popular physicians, and thoroughly worthy of the position.

CHICAGO.

To the Editor of THE MEDICAL NEWS,

SIR: A small pamphlet of one hundred and thirty-seven pages has just been published by Mr. James C. Strain, Ex-warden of the Cook County Hospital, and is entitled *Medical and Surgical Reports of the Cook County Hospital, Chicago, for the six months ending July 1, 1890.* It includes a history of the hospital and the registrar's report, the surgical and medical abstracts being well illustrated. It is the first medical report of the hospital that has been issued. The Cook County Hospital is just twenty-five years old, having been organized in 1865, though it did not begin its work until January, 1866. Previously to that time the city cared for its sick at the Mercy Hospital. But in January, 1866, it fitted up two wards in the old City Hospital, at the corner of Eighteenth and Arnold Streets, and moved to them twelve patients from the Mercy Hospital. These wards were rapidly filled, and additions to the building were erected. But these, too, soon became overcrowded, and in 1876 the institution was removed to its present location, at the corner of West Harrison and Wood Streets. The new structures, not all of which were erected at the same time, consist of a long administration building of imposing appearance, and a pavilion of four wards with a wing of three wards on each side. There is plenty of space between all these buildings, conducing not only to their appearance, but to the light, ventilation, and comfort of the wards. The grounds contain twelve acres. In the administration building are the main office, the examining room for patients, the drug store, the office of the custodian, the office for coroner's inquests, the offices of the warden, the registrar, the chief clerk, the hospital committee, and the medical board, and the private apartments of the warden, internes, and druggist. In the rear of this building are the instrument-room, the office of the training-school for nurses, and the amphitheatre.

The wards are thirteen in number, and of these, three are men's medical wards, five are men's surgical wards, one is a woman's medical ward, and two are women's surgical wards, one is an obstetrical ward and one a ward for children. The pavilion wards are large, being 120 feet long and 30 feet wide. There are in each of them about forty beds. The wing wards are 40 feet long and 15 feet wide, and contain about thirty beds. They are lighted by windows on three sides, and each ward has in connection with it a bath-room, a nurse-room, a linen-room, a kitchen, and a dining-room. The surgical wards have, in addition, operating-rooms. The beds are iron, with woven-wire springs. The floors of the wards are of Georgia pine, and the floors of the corridors are paved with tiles.

During the six months ending January 4, 1889, there were received and treated 3255 cases, and during the six months ending July 1, 1889, 3903 cases, showing an increase of 648. As there were 435 patients present on January 1, 1889, and 488 on July 1, 1889, the number in the hospital during the two periods, respectively, was 3690 and 4391. So that it is only a matter of time when the vast accommodations of the hospital will have to be increased to keep pace with the growing wants of our city.

The September grand jury of Chicago, after visiting the public institutions, recommended that a crematory be built at the Hospital, and that some of the inmates of the infirmary should be sent to the State institution.

The registrar's report contains analytical tables of the diseases treated, of the patients admitted, of the conditions in which some of them were discharged, and of the number of those that died. This report is followed by a long and interesting dissertation on the "Treatment of Empyæma," by Dr. Bayard Holmes, editor of the *North American Practitioner*.

The surgical abstract includes cases of compound fracture, bullet wounds of the hand, injury of the musculo-spiral nerve, fracture of the larynx from falls, death from œdema of the glottis, fracture of the trachea, resection of the ulnar nerve, nephrorraphy, and many other interesting subjects. The medical abstract contains many interesting cases, including carcinoma of the œsophagus, rupture of the portal vein from a fall, chylous ascites, Hodgkin's disease, thoracic aneurism, Landry's paralysis, etc.

Dr. William N. Hibbard, of this city, died on October 29th. The cause of his death is said to have been ptomaïne-poisoning, and the attendant circumstances were peculiarly distressing.

About a week before his death Dr. Hibbard ate some oysters, which, doubtless, contained the poisonous substance. The paroxysmal efforts of his digestive system to rid itself of the poison brought on intussusception, and his physicians decided that his life could be saved only by an operation. The patient, however, was too weak to rally, and died while under the influence of the anæsthetic.

Dr. Hibbard was born December 16, 1858, at Freeport, Illinois. He was prepared for college in the Hyde Park High School, and entered the University of Vermont at Burlington, of which both his father and grandfather were graduates. He was graduated in the class of 1880. He taught for three years in the High Schools of Chicago and then entered the Chicago Medical College, from which he was graduated in 1886. He was then appointed an interne in the Cook County Hospital, serving for eighteen months, after which he began the practice of medicine in Hyde Park, and was shortly after appointed Demonstrator of Anatomy in the Chicago Medical College. Few young physicians had brighter prospects, or a larger number of friends. After his graduation from the Chicago Medical College he married Miss Mary Barker, of Kenwood, who, with a son two years old, survives him.

At a recent meeting of the Chicago Medico-legal Society, Dr. M. H. Lackersteen read a paper entitled "The Scientific Aspect of Medical Hypnotism." He asserted that of all modern therapeutic measures hypnotism

has caused the most debate and excited the most prejudice. He believed that the dreams of hypnotism are no more dangerous or injurious than are those of normal sleep, and denied that hypnotism leads to mental derangement or to paralysis. There are few remedies, he said, that are not dangerous when carelessly used, and this is also true of hypnotism. The fact that ignorant persons can exercise the hypnotic influence is no argument against the usefulness of hypnotism. He regretted that quacks and impostors have taken advantage of the new discovery and brought it into disrepute. There are few people, he said, that are not susceptible to the hypnotic influence, and some can be influenced even by a letter. A case was cited in which a physician frequently wrote to a certain patient telling him to fall asleep at a certain hour. The order was never disobeyed.

During many years of life in India, Dr. Lackersteen had an opportunity to witness the results of hypnotic treatment as practised by Indian doctors. They accomplished by charms, incantations, and superstitions, cures which would baffle the most skilled, scientific physicians.

DR. GOODELL'S ARTICLE.

To the Editor of THE MEDICAL NEWS,

SIR: In your issue of last week, my article entitled "What I have Learned to Unlearn in Gynecology" contains a serious error, which was overlooked in the proof-reading. In the first column of page 562 the word *not* should be erased, and the sentence should read: "I have learned to unlearn the idea—and this was the hardest task of all—that uterine symptoms are always present in cases of uterine disease; or that, when present, they necessarily come from the uterine disease."

Yours truly,
WILLIAM GOODELL, M.D.

NEWS ITEMS.

Koch's Method.—The special correspondent of the *British Medical Journal* gives the following account of von Bergmann's, Levy's, Fräntzel's, and Gerhardt's cases:

Dr. v. Bergmann's anxiously-expected address and exhibition of cases treated by Professor Koch's method took place on Sunday evening, November 16th, before a numerous and select audience of invited guests. The Minister of Public Instruction, Herr von Gossler, and amongst other celebrities Professors Virchow, Gerhardt, Liebreich, Waldeyer, and Olshausen were present. In beginning his address Professor v. Bergmann referred in stirring words to the intense emotion which, since Koch's publication, had seized not only suffering but also healing humanity. He then discussed the cases that had come under his own observation, which were cases of (1) lupus, (2) glandular tuberculosis, (3) tuberculosis of the joints and bones, and (4) tuberculosis of the larynx. Five lupus patients were exhibited, to whom a subcutaneous injection of one centigramme of Koch's remedy had been given in the morning between 8.30 and 9.30; all these five cases showed the general and local symptoms spoken of by Koch—namely, fever and inflammation. The lecturer remarked that the unerring certainty with which an attack of fever, accompanied by rigors, followed the application of the remedy, was of the highest interest from a medical point of view. This general reaction was invariably accompanied by a marked action on all tuberculous parts of the body—visible in cases of lupus. Of the patients exhibited some showed temperatures of 41.0° C., and even higher. The lupus spots were enormously swollen and very red, this reaction being more marked in recent cases. One of the patients had suffered from the disease for twenty years and one for twenty-nine years. On Sunday morning, before the subcutaneous injection was given, Professor Gerhardt had designated the first of these as a slight and superficial one; nevertheless, an enormous reaction followed the injection, tending to prove that there was more lupus than had yet been found, and that Koch's remedy finds the most secret places and nests of tubercle bacilli.

The next five patients exhibited were treated in presence of the assembly by Stabsarzt Dr. Pfuhl, subcutaneous injections in varying doses being applied to the back. One of the patients was a sickly-looking lad of seventeen, who had been under Professor v. Bergmann's and the late Professor Volkmann's treatment for the last fourteen years. "Now the poor fellow will have relief at last," said Professor v. Bergmann, smiling.

The next set of three patients exhibited had been under treatment for some time, and had gone through a course of subcutaneous injections, the reactions becoming weaker after each injection. Here partial cure was already visible; but the application will be continued until no reaction at all can be observed.

Professor v. Bergmann resumed his address by remarking that the value of the remedy was enhanced by the control experiments that could be made in the case of healthy subjects, or those affected by other diseases, which were all-important for diagnosis. He illustrated this by exhibiting a patient suffering from an affection of the cheek, which might have been considered tuberculous. The experimental subcutaneous injection produced no feverish reaction. Probably this case was syphilitic.

The second group exhibited contained two cases of glandular tubercle, in the person of two little girls of scrofulous appearance. Here the reaction was marked.

The third group comprised sixteen cases of tubercle of the joints and bones, with suppuration, fistulæ, and similar phenomena. Some of these, to whom a first injection had been applied, showed the usual symptoms; the joints were much swollen and highly colored, and movement was scarcely possible. Others had been treated by repeated injections. One of these, who suffered from consumption and tuberculous inflammation of the knee-joint, was so severely affected by the injections (intermittent pulse, faintness, etc.), that there seemed cause for anxiety. He had, however, recovered, and was progressing favorably.

The last patients exhibited excited special interest, as they were cases of tubercle of the larynx. Professors Gerhardt and von Ziemssen had in both cases found serious lesions of the larynx. And here the remedy showed its diagnostic value as a means of distinguishing cancer from tuberculosis.

In summing up the cases exhibited, Professor v. Bergmann said that from the local and general phenomena which had already shown themselves the prognosis was decidedly favorable. Nevertheless, in many cases surgical operations would still be unavoidable, as abscesses and dislocations could be cured by mechanical means only. In these cases it would be of the highest importance to guard against relapse by the repetition of Koch's treatment, and thus both methods united gave the brightest prospect of success.

The *Therapeutische Monatshefte* publishes a supplement containing an account of cases treated by Koch's new method in Dr. Levy's clinic. The report, written by Dr. H. Fielchenfeld, Levy's assistant, is here summarized: The treatment was begun on September 22d, that is, not quite two months ago. This comparatively short time has sufficed to show in what cases complete recovery may be hoped for, and where only amelioration of symptoms can be expected. No definite opinion can be formed as to the length of time necessary for perfect recovery. Fielchenfeld cites three cases of lupus, one of which is a sort of test-case, and has already become celebrated in the history of the investigation. In this case all the phenomena of reaction took place in the typical form with which Koch's paper has made the world familiar. A complete cure seemed to have been effected—it was as though the diseased tissue had been cut away with a chisel. Further subcutaneous injections, however, proved that the end of the trouble had not been reached, and that in spite of superficial cicatrization there was considerable tuberculous tissue below awaiting destruction. Even now the patient cannot be considered cured. In a second case of lupus the general condition of the patient became much worse after each subcutaneous injection, and severe pains persisted, especially in the bones of the affected arm.

A third case of lupus is interesting because, of all cases treated in Levy's clinic, it is the one furthest advanced toward recovery. In this case the subcutaneous injections no longer produce a reaction. Here too, however, Dr. Fielchenfeld speaks of "provisional cure" only, as no final verdict can be given after two months in a disease which runs its course so slowly as tuberculosis does.

In cases of tuberculosis of the bones and joints, cures were effected; that is, no reaction followed the subcutaneous injection of even large doses. The same result was obtained in cases of glandular tuberculosis. Turning to his cases of consumption, Dr. Fielchenfeld states that three patients in the first stage of phthisis were dismissed as cured, their sputum having been found free from bacilli, and the auscultatory signs having considerably decreased. Dr. Fielchenfeld, however, does not consider these two facts a complete proof of definite cure. Bacilli may disappear from the sputum to reappear after a time.

As regards the more advanced forms of phthisis, where cavities have already formed, Dr. Fielchenfeld remarks that no complete recovery has been observed. But the general symptoms of the disease—night-sweats, etc.—disappeared promptly. Even in the worst cases there was a diminution of expectoration. There was no increase of weight, even when the general condition was much improved. On the other hand, no loss of weight was observed, even in the most advanced and desperate cases.

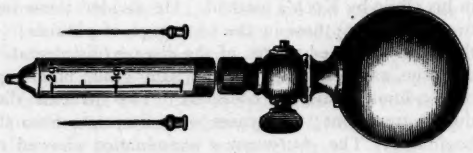
At Monday's meeting of the Verein für innere Medicin, Professor Fräntzel gave an account of the cases treated in his clinic by Koch's method. He divided them into two classes: (1) those in the first stage of phthisis; (2) those in advanced stages of the disease (disintegration of tissue, cavities, etc.). In the latter group no change of condition could be observed. Two patients died during treatment; their cases were desperate from the beginning. The *post-mortem* examination showed no indication of the commencement of recovery. Fräntzel utters a word of warning against using large doses at the beginning of treatment in advanced cases, and cited one case in which death ensued after twenty-four hours. As regards the first group of patients—early stages of consumption—Professor Fräntzel was able to record decided improvement. Expectoration was easier and more abundant after the injection, while the cough decreased. The general condition visibly improved; the appetite became keener, the weight increased, and the night-sweats disappeared. The microscopic examination of the sputum demonstrated first a decrease, and secondly a change of the bacilli. They seemed stunted; nevertheless, their vitality was not destroyed. Fräntzel is of opinion that the treatment, even in the most successful cases, must be continued for a considerable time to guard against relapse.

In a clinical lecture given in the presence of many distinguished physicians on Tuesday, November 18th, Professor Gerhardt gave an account of his experiences with Koch's remedy. He exhibited three cases specially fitted to illustrate the progress made in the diagnosis and treatment of tuberculosis. The first case was one of tuberculosis of the throat, in which various methods had been tried without effect. On Sunday, two milligrammes of Koch's fluid were injected, and a decided reaction was observed on Monday. Considering the success which has attended a similar case in v. Bergmann's clinic, Professor Gerhardt thinks that recovery is possible. The second case was in the initial stage of consumption, whilst the third patient showed an affection of the apex of the lung which aroused suspicions of tuberculosis. Tubercle bacilli had not been found, but this is no absolute proof of the non-existence of tuberculosis. Koch's fluid was injected on Sunday; no reaction ensued, which is a conclusive proof that the affection is not tuberculous. Professor Gerhardt, in conclusion, spoke some serious words of warning. He said it was absurd to imagine that Koch's treatment was of so simple a character that by subcutaneous injection consumption could be simply driven out of the body; on the contrary, in order to apply it successfully, the physician would have to use the most careful discrimination.

Professor Koch's Syringe.—We have received from the maker, Herr E. Kraus, 55 Kommandantenstrasse, Berlin, an electrotype of the syringe used by Professor Koch and his colleagues in their antituberculous inoculations. As will be seen, it is a slightly modified form of the ordinary Pravaz's hypodermic syringe.

The instrument consists (1) in an exactly-graduated glass cylinder of the capacity of two grammes, with a conical nozzle for the reception of the hollow needle;

(2) a stopcock of German silver with an elastic ball; (3) two hollow needles. When the stopcock is closed, the upper part of the glass cylinder filled with injection fluid



is fixed into the hermetically closed cone of the German-silver stopcock. After the canula is introduced, the stopcock is opened and the remedy injected by pressure on the India-rubber ball.—*British Medical Journal*, November 22, 1890.

DR. HENRY MORRIS desires us to state that he has not been and is not a candidate for the Chair of Therapeutics and Materia Medica at the Jefferson Medical College.

Mutter Lectures of the College of Physicians of Philadelphia.—The course of lectures on surgical pathology provide in accordance with the will of the late Professor Thomas D. Mütter, will be delivered during 1890-91, by Professor Roswell Park, of Buffalo, New York.

The first series of five lectures will be given in the Hall of the College of Physicians, corner of Thirteenth and Locust Streets, on December 4th, 5th, 6th, 8th, and 9th, at 8.15 P. M.

The subjects are as follows:

1. Introductory. Study of the blood and of some phases of the inflammatory process. Thrombosis, Embolism, Hæmoglobin, Oligochromæmia, and Ptomaïnes. Conditions predisposing to infection.

2. A study of pus and of pyogenic organisms, obligate and facultative.

3. Surgical sepsis and the organisms which produce it. *Résumé* of experimental work, Surgical Fever, Intestinal Toxæmia, Sapræmia, Septicæmia, and Pyæmia.

4. Peritonitis—forms and causes. Testing the relative values of antiseptics.

5. Tetany and Tetanus.

The medical profession are cordially invited to be present.

WILLIAM HUNT,
Chairman of the Committee.

D. HAYES AGNEW,
President

Prize of the New York State Medical Association.—Dr. J. G. Orton, ex-President of the New York State Medical Association, has offered a prize of $100 for the best short popular essay on some subject connected with practical sanitation, under the following conditions:

1. Competition to be open to all.

2. Essays to be forwarded to the Secretary of the Association, Dr. E. D. Ferguson, Troy, N. Y., not later than August 1, 1891, accompanied by the name of the author under separate seal.

3. Examination and award to be made by a committee appointed by the Council of the Association.

4. The successful essay to be read at the next annual meeting of the Association, and, if approved by the Council, to be offered for publication in the secular press, and issued in tract form or otherwise for general circulation.

5. Authors of essays, unsuccessful so far as the prize is concerned, but found worthy of special commendation, to receive intimation as to a proper disposition to be made of them.

The Congress of Hygiene and Demography.—The Congress of Hygiene and Demography will be held in London during the week beginning August 10, 1891.

The governments of all countries and municipalities, and all public health authorities, universities, colleges, and societies occupied in the study of the sciences more or less immediately connected with hygiene are invited to coöperate and appoint delegates to represent them at the Congress. The Prince of Wales will preside.

A committee of organization has been formed, of which Sir Douglas Galton is chairman, and Professor W. H. Corfield and Mr. Shirley F. Murphy are honorary secretaries. An exhibition of articles of hygienic interest will be held in connection with the Congress. The last of these congresses was held in Vienna in 1887, and was attended by more than 2000 persons, and it is expected that the London meeting will be one of great magnitude and importance.

OFFICIAL LIST OF CHANGES IN THE STATIONS AND DUTIES OF THE MEDICAL CORPS OF THE U. S. NAVY FOR THE WEEK ENDING NOVEMBER 29, 1890.

CRAWFORD, M. H., *Passed Assistant Surgeon.*—Ordered to the Receiving-ship "Independence."

MARSTELLER, E. H., *Passed Assistant Surgeon.*—Ordered to the U. S. S. "Petrel."

NASH, FRANCIS S., *Passed Assistant Surgeon.*—Resigned from the U. S. Navy, to take effect November 23, 1891.

CORDEIRO, F. J. B., *Passed Assistant Surgeon.*—Granted extension of leave for four months, with permission to leave the United States.

LANSDALE, PHILIP, *Medical Director* (Retired).—Granted one year's leave, with permission to leave the United States.

ADRIAN, RICHARD ALFRED.—Commissioned an Assistant Surgeon in the U. S. Navy, from November 24, 1890.

OFFICIAL LIST OF CHANGES OF STATIONS AND DUTIES OF MEDICAL OFFICERS OF THE U. S. MARINE-HOSPITAL SERVICE, FROM NOVEMBER 15 TO NOVEMBER 22, 1890.

FESSENDEN, C. S. D., *Surgeon.*—Granted leave of absence for fourteen days, November 22, 1890.

AUSTIN, H W., *Surgeon.*—Detailed as Chairman of a Board of Medical Officers to convene, December 1, 1890, in Washington, D. C., November 19, 1890.

IRWIN, FAIRFAX, *Surgeon.*—Detailed as a member of a Board of Medical Officers to convene, December 1, 1890, in Washington, D. C., November 19, 1890.

KINYOUN, J. J., *Assistant Surgeon.*—Detailed as Recorder of a Board of Medical Officers to convene, December 1, 1890, in Washington, D. C., November 19, 1890.

WOODWARD, R. M., *Assistant Surgeon.*—Granted leave of absence for fourteen days, November 21, 1890.

CONDICT, A. W., *Assistant Surgeon.*—To proceed to Cairo, Ill., for temporary duty, November 19, 1890.

STIMPSON, W. G., *Assistant Surgeon.*—To proceed to Cape Charles Quarantine, for temporary duty, November 20, 1890.

PROMOTION.

KINYOUN, J. J., *Passed Assistant Surgeon.*—Commissioned as Passed Assistant Surgeon by the President, November 21, 1890.

APPOINTMENT.

COFER, L. E., *Assistant Surgeon*—Commissioned as Assistant Surgeon by the President, November 21, 1890.